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SEARCH REQUEST FORM

Scientific and Technical Information Center

please note that the limitations of chargeable and dischargeable in the claims are not significant and should not be used to limit search. & Thank you

Requester's Full Name: Susy Tsang-Foster Examiner #: 76063 Date: 12/3/02

Art Unit: 1745 Phone Number 30 5-0588 Serial Number: 09/762,220

Mail Box and Bldg/Room Location: CP3 8A09 Results Format Preferred (circle): (PAPER) DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Non-aqueous electrolyte secondary cell and method for manufacturing the same

Inventors (please provide full names): Please see attached list

Earliest Priority Filing Date: 6/4/1999

For Sequence Searches Only ***Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.***

Please search for a non-aqueous electrolyte secondary battery [overlap (same) of claims 1 and 8 attached where claim 8 does not require that a lithium salt be present in the electrolyte] where the battery comprises a chargeable and dischargeable positive electrode, a non-aqueous electrolyte, and a chargeable and dischargeable negative electrode wherein at least one of the positive electrode, the nonaqueous ~~electrode~~ electrolyte and the negative electrode contains at least one of the following selected from a phosphate with formula (1), a phosphate with formula (2) and a phosphate with formula 3). Please see claims 1 and 8. Please also search for claim 3 which states that at least one of the positive electrode, negative electrode, and nonaqueous electrolyte contains a mixture of at least two selected from general formula (1), general formula (2), and general formula (3) where R^{1a}, R^{2a} and R^{3a}, R^{1b}, R^{2b} and R^{1c} have same # of carbon atoms.

****

STAFF USE ONLY	**Type of Search**	**Vendors and cost where applicable**
Searcher: EJ	NA Sequence (#)	STN $337.75
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) (6) (subsets)	Questel/Orbit
Date Searcher Picked Up:	Bibliographic (and)	Dr.Link
Date Completed: 12-10-02	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 10	Fulltext	Sequence Systems
~~Clerical Prep Time:~~	Patent Family	WWW/Internet
Online Time: 95	Other	Other (specify)

PTO-1590 (8-01)

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FILE 'REGISTRY' ENTERED AT 13:45:12 ON 10 DEC 2002
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STRUCTURE FILE UPDATES:     9 DEC 2002  HIGHEST RN 475556-62-8
DICTIONARY FILE UPDATES:    9 DEC 2002  HIGHEST RN 475556-62-8

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d his

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L5             STR L3
L6          22 S L5

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     FILE 'REGISTRY' ENTERED AT 12:42:51 ON 10 DEC 2002
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L10         17 S L7 NOT L9
L11       3224 S L7 NOT L9 FUL
               SAV L11 TSA220/A
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```
     FILE 'HCA' ENTERED AT 12:49:11 ON 10 DEC 2002
L12      175344 S BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY? OR
L13      392546 S ELECTROLY?
L14       38692 S NONAQ# OR NONAQUEOUS? OR NONH2O OR NONWATER? OR NON(A)(
L15              QUE (52 OR 72)/SX,SC
L16       12316 S L11
L17          89 S L16 AND L12
L18        8298 S (L12 OR L15) AND L13 AND L14
L19          12 S L18 AND L16

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L33          138 S L29 AND L30
L34           72 S L29 AND L31
L35         1325 S L30 AND L31
L36           12 S L33 AND (L12 OR L13 OR L14 OR L15)
L37            7 S L34 AND (L12 OR L13 OR L14 OR L15)
L38           64 S L35 AND (L12 OR L13 OR L14 OR L15)
L39            6 S L35 AND (L12 OR L13 OR L15) AND L14
L40            8 S L19 NOT (L36 OR L37 OR L39)

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L7                STR
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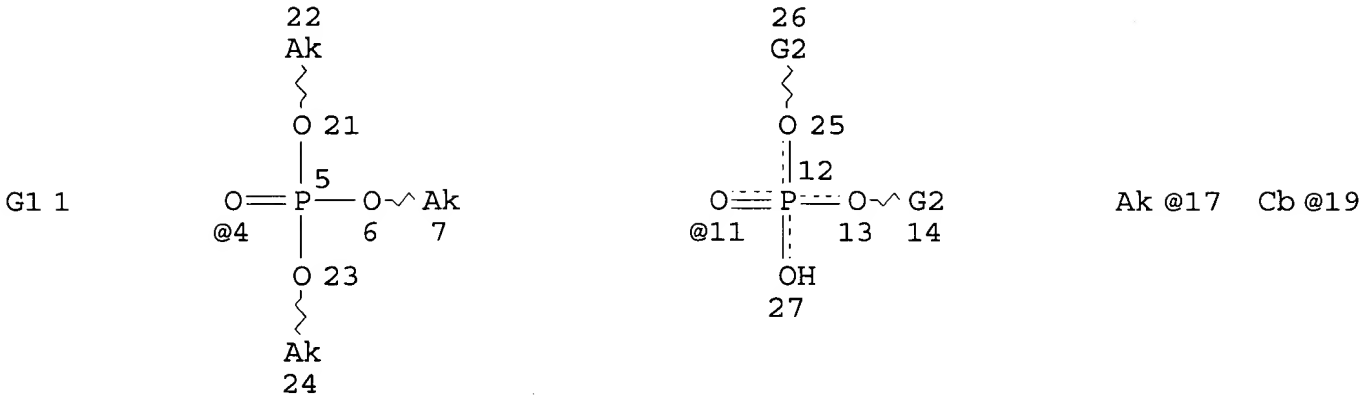

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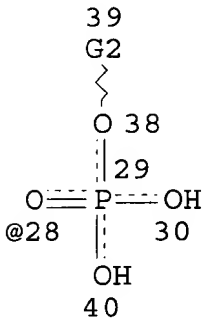

Page 1-B
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VAR G2=17/19
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CONNECT IS E1 RC AT 17
CONNECT IS E1 RC AT 19
CONNECT IS E1 RC AT 22
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DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 7
GGCAT IS SAT AT 17
GGCAT IS UNS AT 19
GGCAT IS SAT AT 22
GGCAT IS SAT AT 24
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M7-X12 C AT 7
ECOUNT IS M1-X12 C AT 17
ECOUNT IS M7-X12 C AT 22
ECOUNT IS M7-X12 C AT 24

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
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STEREO ATTRIBUTES: NONE
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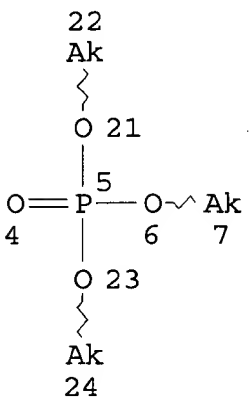

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CONNECT IS E1 RC AT 22
CONNECT IS E1 RC AT 24
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GGCAT IS SAT AT 7
GGCAT IS SAT AT 22
GGCAT IS SAT AT 24
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M7-X12 C AT 7
ECOUNT IS M7-X12 C AT 22
ECOUNT IS M7-X12 C AT 24

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RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
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SEARCH TIME: 00.00.01

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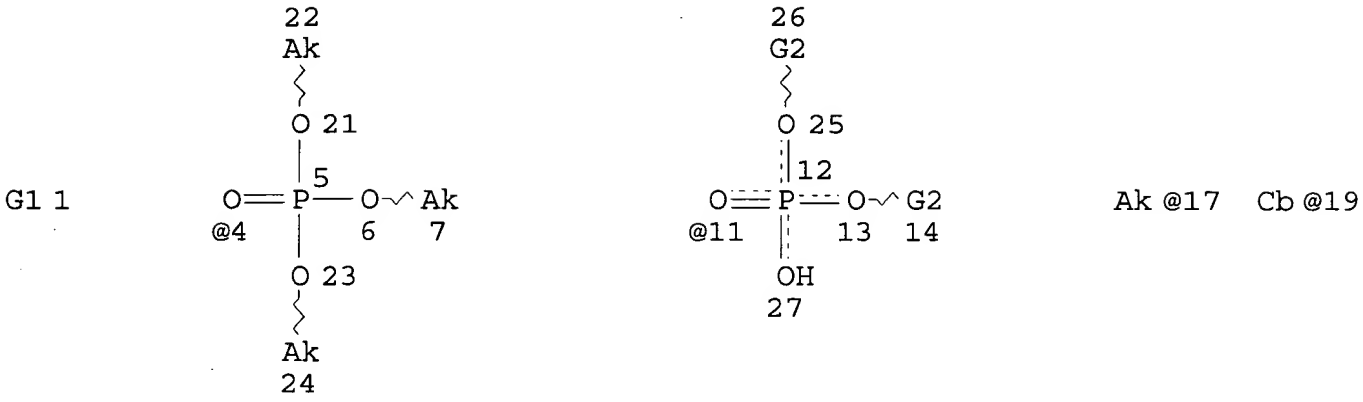

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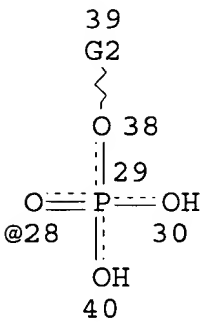

Page 1-B
VAR G1=4/11/28
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NODE ATTRIBUTES:
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CONNECT IS E1 RC AT 17
CONNECT IS E1 RC AT 19
CONNECT IS E1 RC AT 22
CONNECT IS E1 RC AT 24
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 7
GGCAT IS SAT AT 17
GGCAT IS UNS AT 19
GGCAT IS SAT AT 22
GGCAT IS SAT AT 24
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M7-X12 C AT 7
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ECOUNT IS M7-X12 C AT 24

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STEREO ATTRIBUTES: NONE
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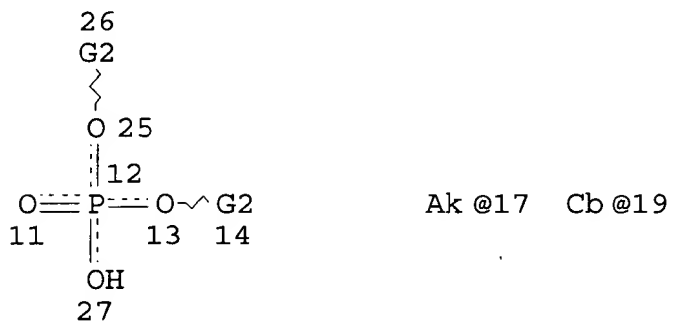

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GGCAT IS SAT AT 17
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DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M1-X12 C AT 17

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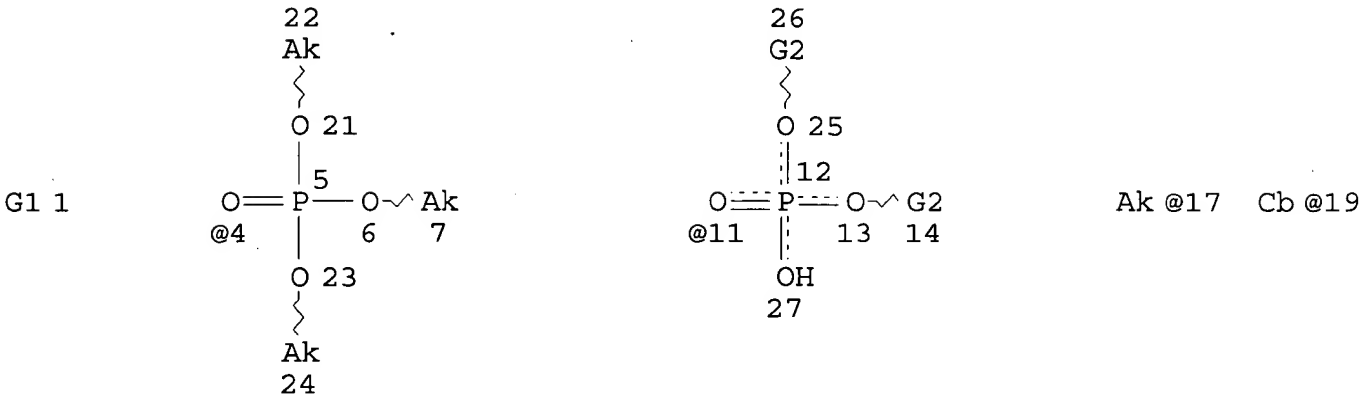

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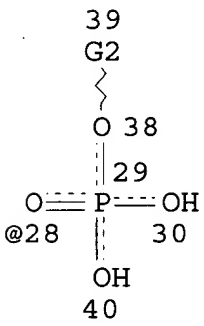

Page 1-B
VAR G1=4/11/28
VAR G2=17/19
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 7
CONNECT IS E1 RC AT 17
CONNECT IS E1 RC AT 19
CONNECT IS E1 RC AT 22
CONNECT IS E1 RC AT 24
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 7
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GGCAT IS SAT AT 22
GGCAT IS SAT AT 24
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M7-X12 C AT 7
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ECOUNT IS M7-X12 C AT 22
ECOUNT IS M7-X12 C AT 24

GRAPH ATTRIBUTES:
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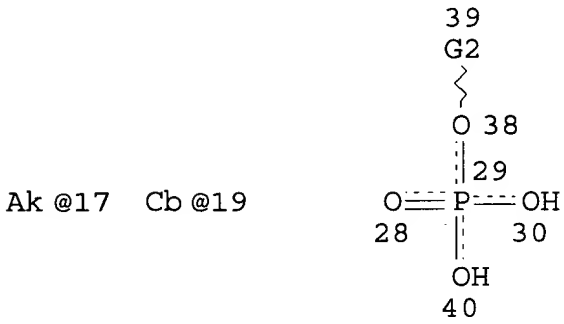
NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE
L9 SCR 2043
L11 3224 SEA FILE=REGISTRY SSS FUL L7 NOT L9
L26 STR



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CONNECT IS E1 RC AT 17
CONNECT IS E1 RC AT 19
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 17
GGCAT IS UNS AT 19
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M1-X12 C AT 17

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
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100.0% PROCESSED 3224 ITERATIONS 1134 ANSWERS
SEARCH TIME: 00.00.01

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FILE COVERS 1907 - 5 Dec 2002 VOL 137 ISS 24
FILE LAST UPDATED: 5 Dec 2002 (20021205/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d l40 1-8 cbib abs hitstr hitind

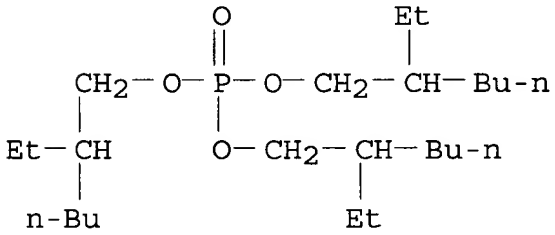
L40 ANSWER 1 OF 8 HCA COPYRIGHT 2002 ACS
137:250247 Secondary **nonaqueous battery**. Nishihara, Shoji; Kishi, Fumihiko; Miyata, Kazushi (Hitachi Maxell Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002270184 A2 20020920, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-72900 20010314.

AB The **battery** has a coiled stack contg. an **electrolyte** retaining separator between a cathode, contg. an active mass mixt. layer on a collector, and an anode, contg. an active mass mixt. layer on a collector; where the cathode active mass mixt. layer has an acidic phosphate ester or its salt. The phosphate is preferably 0.1-1% the wt. of the cathode active mass.

IT **78-42-2**
(lithium cobalt oxide cathodes contg. acidic phosphate esters or their salts for secondary lithium **batteries**)

RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



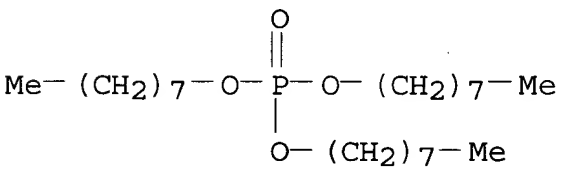
IC ICM H01M004-62
ICS H01M004-02; H01M010-40

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST acidic phosphate ester cathode secondary **nonaq battery**; phosphate ester salt cathode secondary **nonaq battery**

IT **Battery** cathodes
(lithium cobalt oxide cathodes contg. acidic phosphate esters or their salts for secondary lithium **batteries**)
IT 12190-79-3, Cobalt lithium oxide (CoLiO2)
(lithium cobalt oxide cathodes contg. acidic phosphate esters or their salts for secondary lithium **batteries**)
IT **78-42-2** 12788-93-1, Acid butyl phosphate
(lithium cobalt oxide cathodes contg. acidic phosphate esters or their salts for secondary lithium **batteries**)

L40 ANSWER 2 OF 8 HCA COPYRIGHT 2002 ACS
127:236774 **Nonaqueous electrolyte** secondary **battery** containing phosphate triester in **electrolyte** for cycle characteristics. Negoro, Masayuki; Ishizuka, Hiroshi; Matsufuji, Akihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09223516 A2 19970826 Heisei, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-26483 19960214.
AB In the **battery**, which comprises a cathode made of a Li-intercalation compd., an anode made of an amorphous chalcogenide and/or oxide contg. .gtoreq.3 selected from Group IA, IIA, IIIA, IVA, and VA elements, a **nonaq. electrolyte** contg. a Li salt (e.g., LiBF4, LiPF6), and a separator, the **electrolyte** contain .gtoreq.1 phosphate triester. The **battery** has high capacity and improved cycle characteristics.
IT **1806-54-8**, Trioctyl phosphate
(**nonaq. electrolyte** secondary **battery** contg. phosphate triester in **electrolyte** for cycle characteristics)
RN 1806-54-8 HCA
CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M004-02; H01M004-58
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **nonaq electrolyte battery** additive
phosphate triester
IT **Battery electrolytes**
(**nonaq. electrolyte** secondary **battery** contg. phosphate triester in **electrolyte** for cycle characteristics)
IT 14283-07-9, Lithium Boride fluoride (libf4) 21324-40-3, Lithium phosphorus fluoride (LiPF6)
(additive, **electrolyte** contg.; **nonaq.**

electrolyte secondary **battery** contg. phosphate triester in **electrolyte** for cycle characteristics)

IT 193217-88-8P
(anode; **nonaq. electrolyte** secondary **battery** contg. phosphate triester in **electrolyte** for cycle characteristics)

IT 12190-79-3P, Cobalt lithium oxide (colio2)
(cathode; **nonaq. electrolyte** secondary **battery** contg. phosphate triester in **electrolyte** for cycle characteristics)

IT 78-51-3 115-86-6, Triphenyl phosphate 115-96-8, Tris(chloroethyl) phosphate 126-73-8, Tributyl phosphate, uses 512-56-1, Trimethyl phosphate 867-17-4, Diethyl methyl phosphate 1330-78-5, Tricresyl phosphate 1449-89-4 **1806-54-8**, Trioctyl phosphate 2196-04-5, Ethylene methyl phosphate 7664-38-2D, Phosphoric acid, triesters, uses 16492-16-3, Ethylene phenyl phosphate
(**nonaq. electrolyte** secondary **battery** contg. phosphate triester in **electrolyte** for cycle characteristics)

L40 ANSWER 3 OF 8 HCA COPYRIGHT 2002 ACS

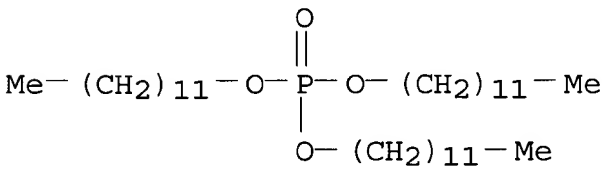
126:49196 **Nonaqueous electrolyte batteries** using improved separators. Akutsu, Mitsuo; Kubota, Naohiro; Tominaga, Nobuhide; Mashita, Nobuya; Ooya, Keiji (Asahi Denka Kogyo Kk, Japan). Jpn. Kokai Tokkyo Koho JP 08273652 A2 19961018 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-73774 19950330.

AB The separators consist of thermoplastic resins contg. 0.01-5% O:P(OR1)(OR2)(OR3) (R1, R2, R3 = C8-30 alkyl, alkenyl). The separators have improved impregnation performance with **nonaq. electrolytes**, and the **batteries** have high capacity and voltage.

IT **682-49-5**, Trilauryl phosphate
(**nonaq. batteries** using thermoplastic separators contg.)

RN 682-49-5 HCA

CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



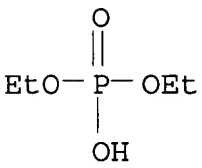
IC ICM H01M002-16
ICS H01M006-16

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST **battery nonaq** separator thermoplastic phosphate

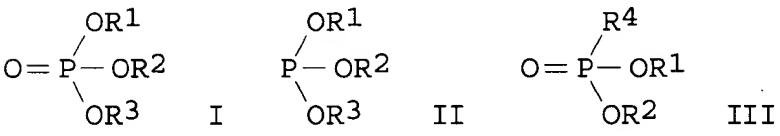
ester
IT Primary **battery** separators
Secondary **battery** separators
(contg. phosphate esters)
IT Polypropene fibers, uses
(**nonaq. batteries** using thermoplastic separators contg. phosphate esters and nonwoven fabric of)
IT **682-49-5**, Trilauryl phosphate 3305-68-8, Trioleyl phosphate 4889-45-6, Tristearyl phosphate 64131-09-5
(**nonaq. batteries** using thermoplastic separators contg.)
IT 25085-53-4, Isotactic polypropylene
(**nonaq. batteries** using thermoplastic separators contg. phosphate esters and nonwoven fabric of)
IT 9002-88-4, Polyethylene
(**nonaq. batteries** using thermoplastic separators contg. phosphate esters and porous membrane of)

L40 ANSWER 4 OF 8 HCA COPYRIGHT 2002 ACS
125:119572 **Nonaqueous electrolyte** solutions for **batteries**. Hibara, Akio; Yokoyama, Keiichi (Mitsui Petrochemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP 08138733 A2 19960531 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-272481 19941107.
AB The **electrolyte** solns. contain a Li salt dissolved in an org. solvent and a Li salt of a phosphoric acid ester O:P(OR)(OR1)OLi, where R and R' are C1-4 alkyl, halogen substituted C2-4 alkyl, or Li, but not both R and R1 are Li. The phosphate is preferably di-Et lithium phosphate, and the solvent is selected from R2COOR3(R2 = Me, Et, Pr, MeO, or EtO; R3 = linear or branched C1-3 alkyl), ethylene carbonate, propylene carbonate, butylene carbonate, vinyl carbonate, .gamma.-butyrolactone, and sulfolane. The **electrolyte** solns. are self fire extinguishing.
IT **51501-07-6**
(compns. of self fire extinguishing **nonaq. electrolyte** solns. contg. phosphoric acid ester lithium salts for **batteries**)
RN 51501-07-6 HCA
CN Phosphoric acid, diethyl ester, lithium salt (9CI) (CA INDEX NAME)



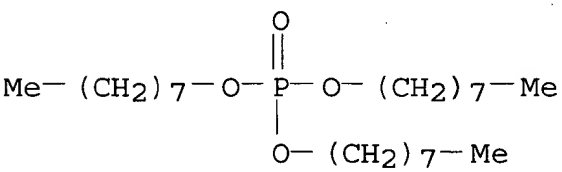
IC ICM H01M010-40
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery electrolyte** phosphoric acid ester salt; **electrolyte** phosphoric acid ester lithium salt; safety **battery** self fire extinguishing **electrolyte**
IT **Battery electrolytes**
Safety
(compns. of self fire extinguishing **nonaq.** **electrolyte** solns. contg. phosphoric acid ester lithium salts for **batteries**)
IT 96-49-1, Ethylene carbonate 623-53-0, Methyl ethyl carbonate 21324-40-3, Lithium hexafluorophosphate **51501-07-6**
(compns. of self fire extinguishing **nonaq.** **electrolyte** solns. contg. phosphoric acid ester lithium salts for **batteries**)

L40 ANSWER 5 OF 8 HCA COPYRIGHT 2002 ACS
120:222453 Phosphorus compound treated separators for **nonaqueous electrolyte batteries.** Ono, Akira; Yoshino, Akira (Asahi Chemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP 06020672 A2 19940128 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-173214 19920630.
GI

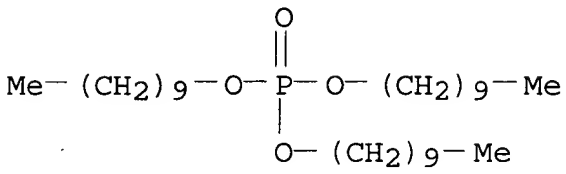


I II III

AB The separators are microporous polyolefin membranes treated with phosphates (I-III), where R1-3 are C4-30 alkyl, allyl, aryl, aralkyl, or halogenated alkyl groups and R4 is C1-30 alkyl, allyl, aryl, aralkyl, or halogenated alkyl groups. These separators have high **electrolyte** absorption rate.
IT **1806-54-8**, Trioctyl phosphate **4200-55-9**, Tridecyl phosphate
(microporous polyethylene separators treated with, for **nonaq. batteries**)
RN 1806-54-8 HCA
CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



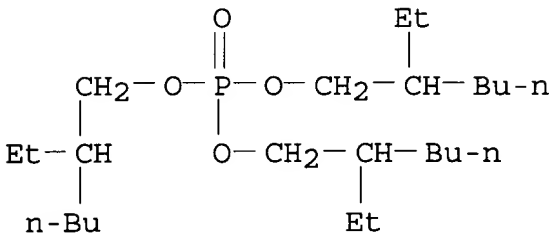
RN 4200-55-9 HCA
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



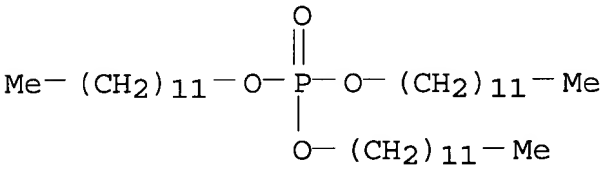
IC ICM H01M002-16
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** separator polyolefin phosphate treatment
IT **Batteries**, secondary
(separators, polyolefin, phosphorus compd. treatment of, for rapid **nonaq. electrolyte** absorption)
IT 13598-36-2, Phosphonic acid
(esters, microporous polyethylene separators treated with, for **nonaq. batteries**)
IT **1806-54-8**, Trioctyl phosphate **4200-55-9**, Tridecyl phosphate 4889-45-6, Tristearyl phosphate 10294-56-1D, Phosphorous acid, triesters 56827-95-3, Tricetyl phosphate
(microporous polyethylene separators treated with, for **nonaq. batteries**)
IT 9002-88-4, Polyethylene
(microporous separators, phosphorus compd. treated, for **nonaq. batteries**)

L40 ANSWER 6 OF 8 HCA COPYRIGHT 2002 ACS
114:46609 **Nonaqueous batteries**. Ono, Akira; Yoshino, Akira (Asahi Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02244565 A2 19900928 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1989-63843 19890317.
AB **Electrolytes** of **nonaq. batteries** contain 0.01-5 wt.% O:P(OR1)(OR2)(OR3), where R1-3 = C4-30 alkyl, aryl, allyl, aralkyl, haloalkyl; P(OR4)(OR5)(OR6), where R4-6 = C4-30 alkyl, aryl, allyl, aralkyl, haloalkyl; and/or O:PR7(OR8)(OR9), wher R7 = C1-30 alkyl, aryl, aralkyl, haloalkyl, and R8-9 = C4-30 alkyl, aryl, allyl, aralkyl, haloalkyl. These additives increase permeability of **electrolyte** in separator and provide a high capacity and voltage. Thus, an **electrolyte** of 1M LiClO4/propylene carbonate contg. 2% trioctyl phosphate was used in a **battery** having needle coke anode, LiCoO2 cathode, and porous polypropylene separator. A good permeation of **electrolyte** was obsd., and **battery** capacity was 1.9 A-h, vs. a bad permeation and capacity of 0.6 A-h for a ref. **battery** with **electrolyte** contg. 0.005% trioctyl phosphate.
IT **78-42-2**, Trioctyl phosphate **682-49-5**, Trilauryl phosphate **13018-37-6**, Trinonyl phosphate
(**electrolyte** contg., **nonaq.**, for

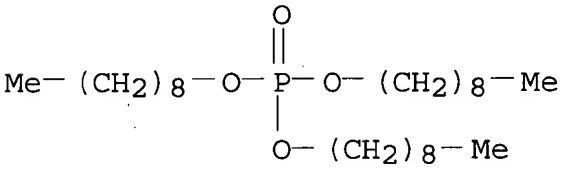
batteries)
RN 78-42-2 HCA
CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 682-49-5 HCA
CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 13018-37-6 HCA
CN Phosphoric acid, trinonyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M010-40
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **electrolyte nonaq battery** phosphorus compd; separator **nonaq electrolyte** permeation
IT **Batteries**, primary
(with **nonaq. electrolytes** contg. phosphorus compds.)
IT **78-42-2**, Trioctyl phosphate 78-46-6, Dibutyl butylphosphonate 115-86-6, Triphenyl phosphate 126-73-8, Tributyl phosphate, uses and miscellaneous **682-49-5**, Trilauryl phosphate **13018-37-6**, Trinonyl phosphate
(**electrolyte** contg., **nonaq**., for **batteries**)

L40 ANSWER 7 OF 8 HCA COPYRIGHT 2002 ACS
102:35240 **Electrolytes** in the anodic oxidation of titanium.
Climent Montoliu, F.; Capellades Font, R.; Vidal Planells, M. I.

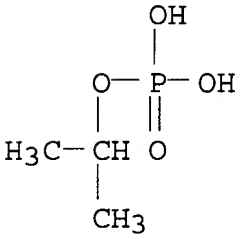
(Fac. Quim., Univ. Barcelona, Spain). Anales de Quimica, Serie B: Quimica Inorganica y Quimica Analitica, 79(2), 290-2 (Spanish) 1983. CODEN: AQSAD3. ISSN: 0211-1349.

AB The breakdown potentials of TiO2 (anatase) films formed anodically were studied in aq. and **nonaq**. solns. For potentials <50 V, an aq. soln. of citric acid (1.47%), pH 1.81 was found to have a breakdown potential at 25.degree. of 105 V. A soln. of NaOAc in ethylene glycol (2.97%), pK 7.8, had a breakdown potential at 25.degree. of 111 V. To operate condensers at .ltoreq.100 V, the following soln. was recommended: Na phosphate in ethylene glycol (0.4%) and iso-Pr phosphate (20%) which had a breakdown potential at 25.degree. of 215 V. These solns. had the highest breakdown potentials.

IT **1623-24-1**
(elec. breakdown potential of anodic titania films in **nonaq**. soln. contg.)

RN 1623-24-1 HCA

CN Phosphoric acid, mono(1-methylethyl) ester (9CI) (CA INDEX NAME)



CC **72-7** (Electrochemistry)
Section cross-reference(s): 76

IT Electric breakdown
(in anodization of titanium in aq. and **nonaq**. solns.)

IT Anodization
(of titanium, in aq. and **nonaq**. solns., breakdown potential in relation to)

IT 13463-67-7, properties
(anodic films of, breakdown potential of, in aq. and **nonaq**. solns.)

IT 7440-32-6, uses and miscellaneous
(anodization of, in aq. and **nonaq**. solns., breakdown potential in)

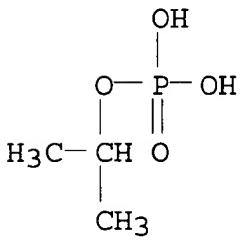
IT 7558-79-4
(elec. breakdown potential of anodic titania films in aq. and **nonaq**. solns. contg.)

IT 77-92-9, properties 87-69-4, properties 127-09-3 144-62-7, properties 497-19-8, properties 631-61-8 1310-73-2, properties **1623-24-1** 18996-35-5
(elec. breakdown potential of anodic titania films in **nonaq**. soln. contg.)

IT 7664-38-2, properties 12007-57-7
(elec. breakdown potential of anodic titania in aq. and

nonaq. solns. contg.)
IT 7664-93-9, properties
(elec. breakdown potential of anodic titania in **nonaq**. soln. contg.)

L40 ANSWER 8 OF 8 HCA COPYRIGHT 2002 ACS
98:115749 Anodic oxidation of titanium. Schmidt, H. K.; Capellades, R.; Vidal, M. I. (Lab. Invest. Componentes Electron. S. A., Fr.). Revue Technique Thomson-CSF, 14(3), 657-70 (French) 1982. CODEN: RTTCBG. ISSN: 0035-4279.
AB A method is described for attaining forming voltages >100V, as well as for stabilizing the elec. parameters of the Ti/TiO2 system in anodizing Ti for fabricating **electrolytic** capacitors. The 3 solns. used for studying the anodic oxidn. of Ti at different operating voltages of 1-100V were: citric acid 1.79, NaOAc in ethylene glycol 2.97, and Na phosphate in ethylene glycol 0.4 + iso-Pr phosphate 20%. The layers of TiO2 obtained in **nonaq** . **electrolytes** are much more adherent and uniform than those realized in aq. media.
IT **1623-24-1**
(in anodization, of titanium at different operating voltages for **electrolytic** capacitors)
RN 1623-24-1 HCA
CN Phosphoric acid, mono(1-methylethyl) ester (9CI) (CA INDEX NAME)



CC **72-7** (Electrochemistry)
Section cross-reference(s): 76
ST anodic oxidn titanium aq **nonaq**; anodization titanium **electrolyte** capacitor; citric acid anodization titanium; sodium acetate anodization titanium; phosphate isopropyl anodization titanium; ethylene glycol anodization titanium
IT Anodization
(of titanium, for **electrolytic** capacitors)
IT Electric capacitors
(**electrolytic**, anodization of titanium for)
IT 7440-32-6, uses and miscellaneous
(anodization of, for **electrolytic** capacitors)
IT 77-92-9, uses and miscellaneous 107-21-1, uses and miscellaneous 127-09-3 **1623-24-1**
(in anodization, of titanium at different operating voltages for **electrolytic** capacitors)
IT 7632-05-5 76483-21-1

(in anodization, of titanium at different operating voltages for **electrolytic** capacitors)

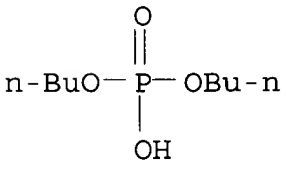
=> d l36 1-12 cbib abs hitstr hitind

L36 ANSWER 1 OF 12 HCA COPYRIGHT 2002 ACS
134:44552 Secondary **nonaqueous electrolyte batteries** and their manufacture. Takezawa, Hideharu; Bito, Yasuhiko; Matsuda, Hiromu; Toyoguchi, Yoshinori (Matsushita Electric Industrial Co., Ltd., Japan). PCT Int. Appl. WO 2000076016 A1 20001214, 39 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP3581 20000601. PRIORITY: JP 1999-158615 19990604.

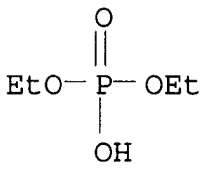
AB The **batteries** use cathodes, anodes, and/or Li salt **electrolyte** solns. contg. tri C7-12-alkyl phosphate, di C1-12-alkyl or di-aryl phosphate, and/or mono C1-12 alkyl phosphate or mono-aryl phosphate. The **batteries** are prepd. by using an electrode active mass, active mass paste, and/or electrodes contg. the phosphate ester.

IT **107-66-4**, Dibutyl phosphate **598-02-7**, Diethyl phosphate **682-49-5**, Tridodecyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate **1804-93-9**, Dipropyl phosphate **1806-54-8**, Trioctyl phosphate **3115-39-7**, Dioctyl phosphate **3138-42-9**, Dipentyl phosphate **3138-43-0**, Dinonyl phosphate **3900-12-7**, Diheptyl phosphate **3900-13-8**, Dihexyl phosphate **4200-55-9**, Tridecyl phosphate **4621-50-5**, Triheptyl phosphate **7057-92-3**, Didodecyl phosphate **7598-64-3**, Diundecyl phosphate **7795-87-1**, Didecyl phosphate **13018-37-6**, Trinonyl phosphate **19541-53-8 54653-10-0 54653-24-6 86052-84-8 130675-91-1 130675-92-2 160087-64-9 312636-94-5 312636-95-6 312636-96-7 312636-97-8 312636-98-9 312636-99-0**
(phosphate ester additives in electrodes and **electrolyte** solns. for secondary lithium **batteries**)

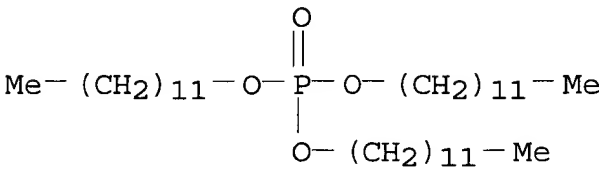
RN 107-66-4 HCA
CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)



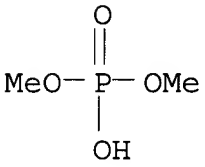
RN 598-02-7 HCA
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



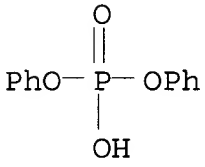
RN 682-49-5 HCA
CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



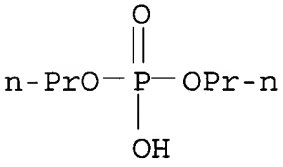
RN 813-78-5 HCA
CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



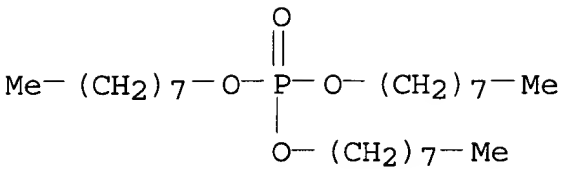
RN 838-85-7 HCA
CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



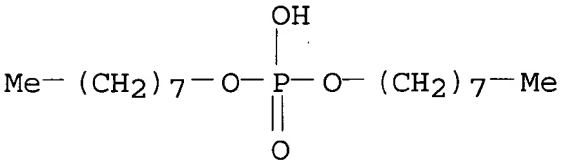
RN 1804-93-9 HCA
CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



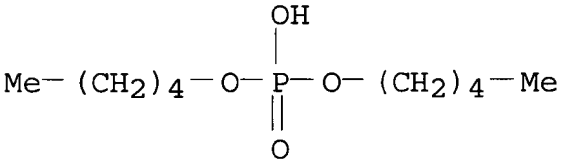
RN 1806-54-8 HCA
CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



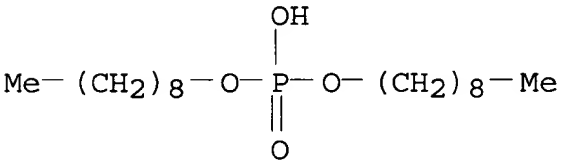
RN 3115-39-7 HCA
CN Phosphoric acid, dioctyl ester (8CI, 9CI) (CA INDEX NAME)



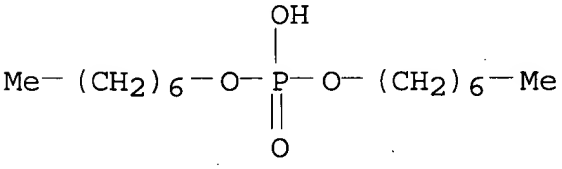
RN 3138-42-9 HCA
CN Phosphoric acid, dipentyl ester (8CI, 9CI) (CA INDEX NAME)



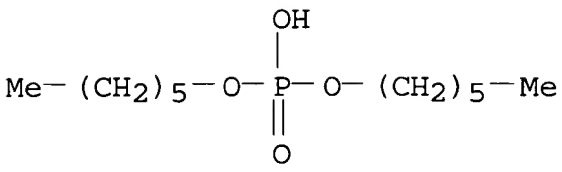
RN 3138-43-0 HCA
CN Phosphoric acid, dinonyl ester (8CI, 9CI) (CA INDEX NAME)



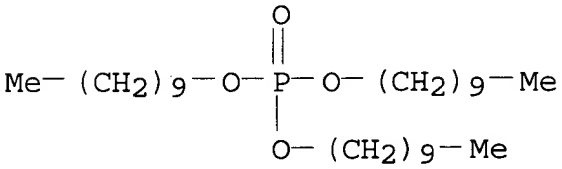
RN 3900-12-7 HCA
CN Phosphoric acid, diheptyl ester (8CI, 9CI) (CA INDEX NAME)



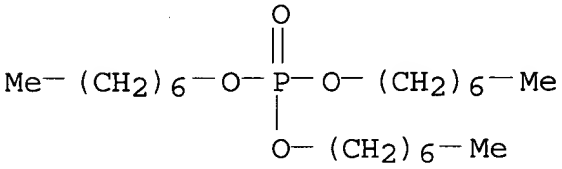
RN 3900-13-8 HCA
CN Phosphoric acid, dihexyl ester (8CI, 9CI) (CA INDEX NAME)



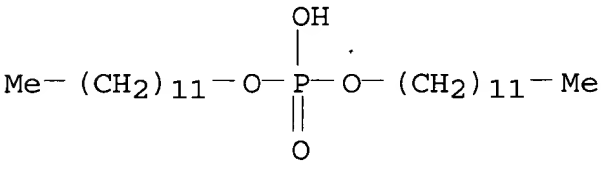
RN 4200-55-9 HCA
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



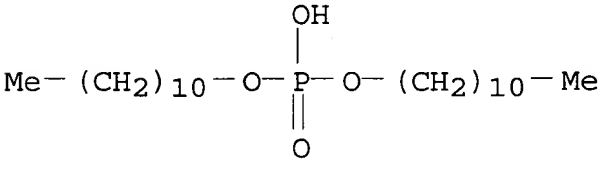
RN 4621-50-5 HCA
CN Phosphoric acid, triheptyl ester (8CI, 9CI) (CA INDEX NAME)



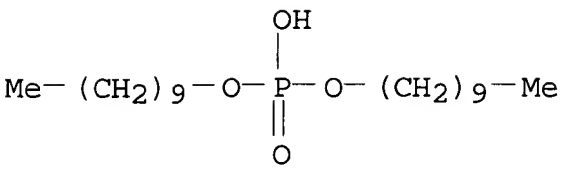
RN 7057-92-3 HCA
CN Phosphoric acid, didodecyl ester (8CI, 9CI) (CA INDEX NAME)



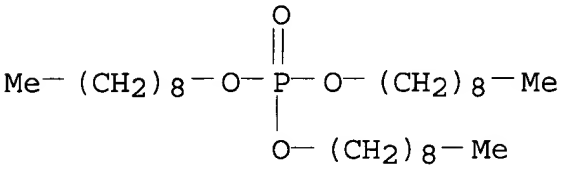
RN 7598-64-3 HCA
CN 1-Undecanol, hydrogen phosphate (9CI) (CA INDEX NAME)



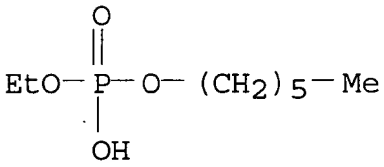
RN 7795-87-1 HCA
CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



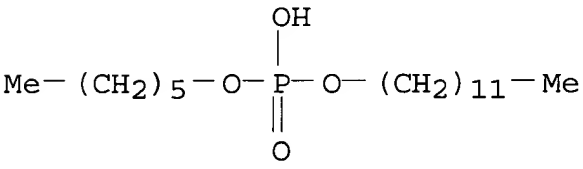
RN 13018-37-6 HCA
CN Phosphoric acid, trinonyl ester (8CI, 9CI) (CA INDEX NAME)



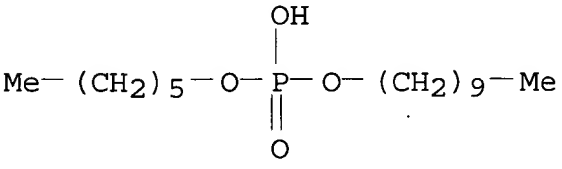
RN 19541-53-8 HCA
CN Phosphoric acid, monoethyl monohexyl ester (9CI) (CA INDEX NAME)



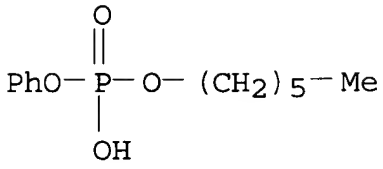
RN 54653-10-0 HCA
CN Phosphoric acid, monododecyl monohexyl ester (9CI) (CA INDEX NAME)



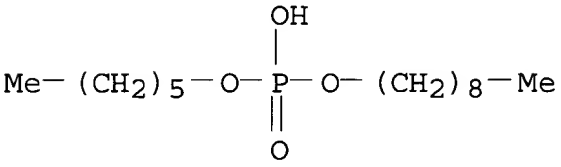
RN 54653-24-6 HCA
CN Phosphoric acid, monodecyl monohexyl ester (9CI) (CA INDEX NAME)



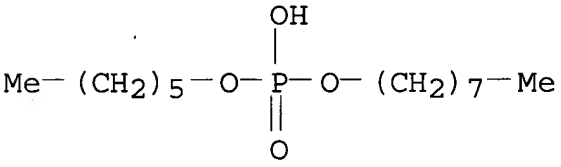
RN 86052-84-8 HCA
CN Phosphoric acid, monohexyl monophenyl ester (9CI) (CA INDEX NAME)



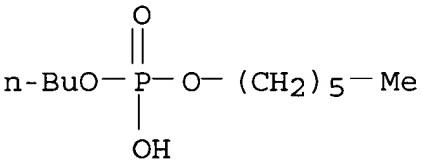
RN 130675-91-1 HCA
CN Phosphoric acid, monohexyl monononyl ester (9CI) (CA INDEX NAME)



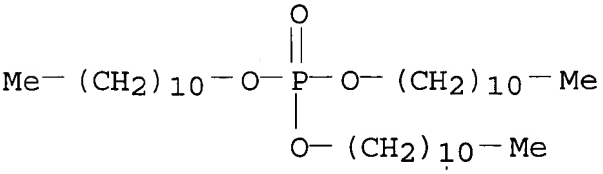
RN 130675-92-2 HCA
CN Phosphoric acid, monohexyl monooctyl ester (9CI) (CA INDEX NAME)



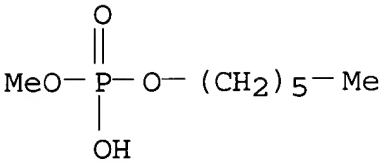
RN 160087-64-9 HCA
CN Phosphoric acid, monobutyl monohexyl ester (9CI) (CA INDEX NAME)



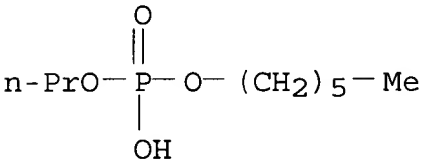
RN 312636-94-5 HCA
CN 1-Undecanol, phosphate (3:1) (9CI) (CA INDEX NAME)



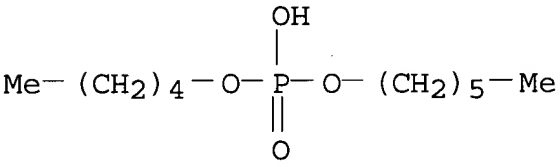
RN 312636-95-6 HCA
CN Phosphoric acid, monohexyl monomethyl ester (9CI) (CA INDEX NAME)



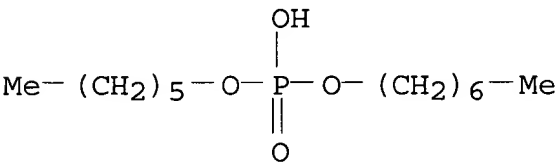
RN 312636-96-7 HCA
CN Phosphoric acid, monohexyl monopropyl ester (9CI) (CA INDEX NAME)



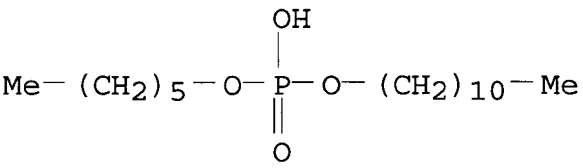
RN 312636-97-8 HCA
CN Phosphoric acid, monohexyl monopentyl ester (9CI) (CA INDEX NAME)



RN 312636-98-9 HCA
CN Phosphoric acid, monoheptyl monohexyl ester (9CI) (CA INDEX NAME)



RN 312636-99-0 HCA
CN Phosphoric acid, monohexyl monoundecyl ester (9CI) (CA INDEX NAME)



IC ICM H01M010-40
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium **battery** phosphate ester additive

IT Secondary **batteries**
(lithium; electrodes and **electrolyte** solns. contg. phosphate ester additives for secondary lithium **batteries**)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 7440-44-0, Carbon, uses 7791-03-9, Lithium perchlorate 12190-79-3, Cobalt lithium oxide (CoLiO2)
(electrodes and **electrolyte** solns. contg. phosphate ester additives for secondary lithium **batteries**)

IT **107-66-4**, Dibutyl phosphate **598-02-7**, Diethyl phosphate **682-49-5**, Tridodecyl phosphate 701-64-4, Monophenyl phosphate 812-00-0, Monomethyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate 1623-06-9, Monopropyl phosphate 1623-14-9, Monoethyl phosphate 1623-15-0, Monobutyl phosphate **1804-93-9**, Dipropyl phosphate **1806-54-8**, Trioctyl phosphate 2382-76-5, Monopentyl phosphate 2627-35-2, Monododecyl phosphate **3115-39-7**, Dioctyl phosphate **3138-42-9**, Dipentyl phosphate **3138-43-0**, Dinonyl phosphate 3900-03-6, Monoheptyl phosphate 3900-04-7, Monohexyl phosphate **3900-12-7**, Diheptyl phosphate **3900-13-8**, Dihexyl phosphate 3921-30-0, Monodecyl phosphate 3991-73-9, Monooctyl phosphate **4200-55-9**, Tridecyl phosphate **4621-50-5**, Triheptyl phosphate **7057-92-3**, Didodecyl phosphate **7598-64-3**, Diundecyl phosphate **7795-87-1**, Didecyl phosphate **13018-37-6**, Trinonyl phosphate **19541-53-8** 36047-43-5, Monononyl phosphate 36047-45-7, Monoundecyl phosphate **54653-10-0 54653-24-6** **86052-84-8 130675-91-1 130675-92-2** **160087-64-9 312636-94-5 312636-95-6** **312636-96-7 312636-97-8 312636-98-9** **312636-99-0**
(phosphate ester additives in electrodes and **electrolyte** solns. for secondary lithium **batteries**)

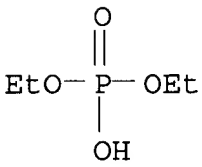
L36 ANSWER 2 OF 12 HCA COPYRIGHT 2002 ACS
132:287557 Aluminum **electrolytic** capacitor with no flash point or degradation. Tsubaki, Yuichiro; Matsuura, Hiroyuki; Morokuma, Munehiro; Minato, Koichiro; Nitta, Yukihiro (Matsushita Electric Industrial Co., Ltd., Japan). Eur. Pat. Appl. EP 996134 A2 20000426, 20 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-120360 19991013. PRIORITY: JP 1998-290333 19981013; JP 1999-255249 19990909.

AB The present invention aims to provide a highly reliable Al **electrolytic** capacitor which has no flash points and shows little change or degrdn. in external appearance and properties. The H2O content of **electrolytic** soln. of the **electrolytic** capacitor of this invention is 20-90% and one or more following compds. are included as main **electrolytes** in the **electrolytic** soln. ; ammonium formate, ammonium acetate, ammonium lactate, ammonium glycolate, ammonium oxalate,

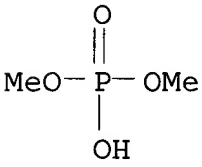
ammonium succinate, ammonium malonate, ammonium adipate, ammonium benzoate, ammonium glutarate, and ammonium azelate. The **electrolytic** soln. also contains .gtoreq.1% of one or more compds. selected from org. carboxylic acids with a particular structure and ammonium salts of these org. acids. The m.p. of the **electrolytic** soln. is -10.degree. and under, the Cl content of a sealing material of the capacitor is .ltoreq.300 ppm to the wt. of the sealing material. The impedance ratio of 20.degree., 100 kHz to-10.degree., 100 kHz of the Al **electrolytic** capacitor is .ltoreq.4. The present invention can provide a highly reliable Al **electrolytic** capacitor of rated voltage of under 100 V, which achieves superior impedance and low temp. properties, and has little risk of ignition even when the **electrolytic** soln. is released.

IT **598-02-7**, Diethyl phosphate **813-78-5**, Dimethyl phosphate **1804-93-9**, Dipropyl phosphate **1806-54-8**, Trioctyl phosphate **3115-39-7 3900-13-8**, Dihexyl phosphate **4200-55-9**, Tridecyl phosphate **7795-87-1**, Didecyl phosphate **44636-58-0**
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)

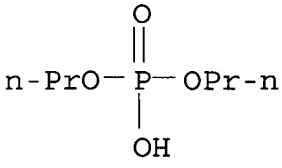
RN 598-02-7 HCA
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 813-78-5 HCA
CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)

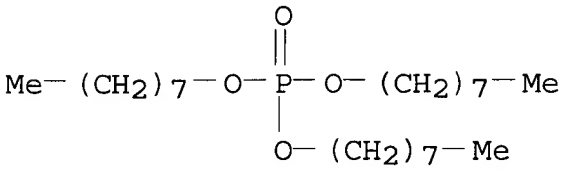


RN 1804-93-9 HCA
CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)

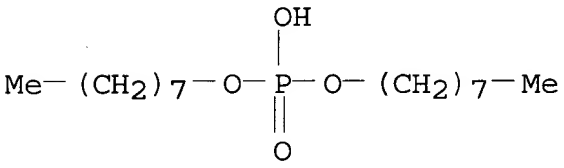


RN 1806-54-8 HCA

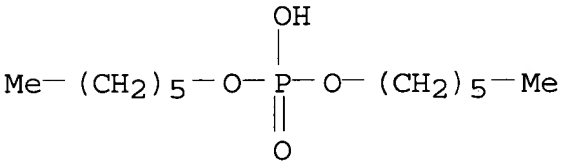
CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



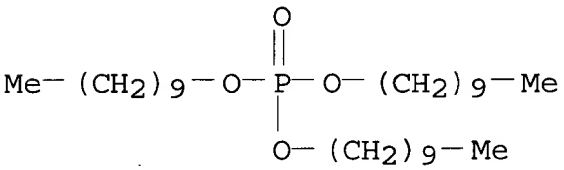
RN 3115-39-7 HCA
CN Phosphoric acid, dioctyl ester (8CI, 9CI) (CA INDEX NAME)



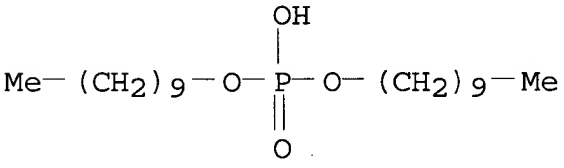
RN 3900-13-8 HCA
CN Phosphoric acid, dihexyl ester (8CI, 9CI) (CA INDEX NAME)



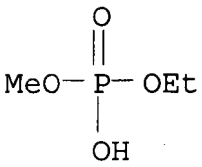
RN 4200-55-9 HCA
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



RN 7795-87-1 HCA
CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 44636-58-0 HCA
CN Phosphoric acid, monoethyl monomethyl ester (9CI) (CA INDEX NAME)



IC ICM H01G009-035
CC 76-10 (Electric Phenomena)
Section cross-reference(s): 38
ST aluminum **electrolytic** capacitor; **electrolyte** ammonium carboxylate capacitor; phosphate ester **electrolytic** capacitor; silicone **electrolytic** capacitor; silane **electrolytic** capacitor; carboxylic acid capacitor
IT Synthetic rubber, uses
(Isobutylene isopropylene; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Silanes
(alkoxy; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT **Electrolytic** capacitors
(aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Carboxylic acids, uses
(ammonium salts; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT **Electrolytes**
Sealing
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Butyl rubber, uses
Carboxylic acids, uses
Polyoxyalkylenes, uses
Polysiloxanes, uses
Silanes
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Alcohols, uses
(polyhydric; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Coupling agents
(silane; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Ethylene-propylene rubber
(terpolymer; aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT 7429-90-5, Aluminum, uses
(aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT 9010-85-9
(butyl rubber, for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)

IT 9010-79-1
(ethylene-propylene rubber, terpolymer; aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)

IT 62-23-7, p-Nitrobenzoic acid 78-40-0, Triethyl phosphate 88-75-5, o-Nitrophenol 91-23-6, o-Nitroanisole 100-02-7, p-Nitrophenol, uses 100-17-4, p-Nitroanisole 107-21-1, Ethylene glycol, uses 111-20-6, Sebacic acid, uses 121-92-6, m-Nitrobenzoic acid 124-04-9D, Adipic acid, tri-Me derivs. 512-56-1, Trimethyl phosphate 513-08-6, Tripropyl phosphate 515-98-0, Ammonium lactate 540-69-2, Ammonium formate 552-16-9, o-Nitrobenzoic acid 554-84-7, m-Nitrophenol 555-03-3, m-Nitroanisole **598-02-7**, Diethyl phosphate 631-61-8, Ammonium acetate **813-78-5**, Dimethyl phosphate 1113-38-8, Ammonium oxalate 1623-06-9, Monopropyl phosphate 1623-15-0, Monobutyl phosphate **1804-93-9**, Dipropyl phosphate **1806-54-8**, Trioctyl phosphate 1863-63-4, Ammonium benzoate 2226-88-2, Ammonium succinate 2466-09-3, Pyrophosphoric acid 2528-39-4, Trihexyl phosphate **3115-39-7** 3900-04-7, Monohexyl phosphate **3900-13-8**, Dihexyl phosphate 3921-30-0, Monodecyl phosphate 3991-73-9, Monooctyl phosphate **4200-55-9**, Tridecyl phosphate 6303-21-5, Hypophosphorous acid 7664-38-2D, Phosphoric acid, alkyl esters, uses 7723-14-0D, Phosphorus, org. compds., uses **7795-87-1**, Didecyl phosphate 7803-65-8 9003-11-6, Ethylene oxide-propylene oxide copolymer 10347-88-3, 3-Tert-Butyladipic acid 18815-40-2, Ammonium malonate 19090-60-9, Ammonium adipate 25322-68-3, Polyethyleneglycol 29750-34-3, Ammonium glutarate 35249-89-9, Ammonium glycolate **44636-58-0** 50905-10-7, Decane-1,6-dicarboxylic acid 82169-85-5, Ammonium azelate 83797-34-6 85090-57-9 88107-08-8 220208-63-9 260059-62-9 263863-41-8
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)

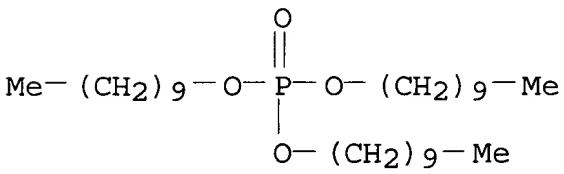
L36 ANSWER 3 OF 12 HCA COPYRIGHT 2002 ACS
127:100973 Sealing of pinholes of gold plating on electric connectors. Fukamachi, Kazuhiko; Hatanaka, Hiroyuki (Nippon Mining Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09170096 A2 19970630 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-330474 19951219.

AB Au (alloy)-plated and Ni (alloy)-deposited connectors are treated by d.c. **electrolysis** at voltage E 0.1-5.0 V with the Au plating as an anode in an emulsion soln. prepd. by adding 0.01-5.0 wt.% self-emulsifier to an inhibitor aq. soln. to fill the pinholes of the Au plating. The soln. preferably contains .gtoreq.1 cyclic N compd. forming chelates with Ni or a substrate metal in total 10-1000 ppm as an inhibitor. The treated connectors show high corrosion resistance, excellent stability of elec. contacts, and improved lubricity.

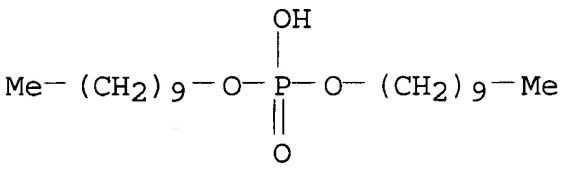
IT **4200-55-9 7795-87-1**
(emulsifier; sealing of gold plating pinholes on nickel-coated

connectors with emulsifier-contg. inhibitor soln. for corrosion resistance and lubricity)

RN 4200-55-9 HCA
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



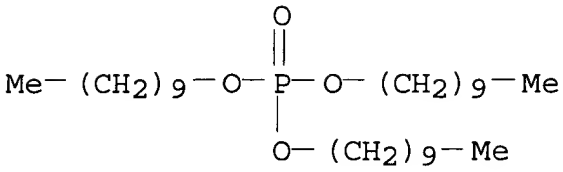
RN 7795-87-1 HCA
CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



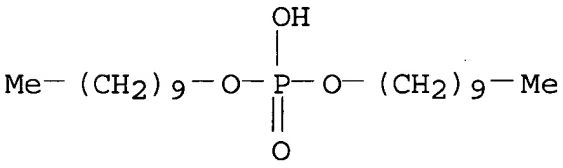
IC ICM C25D011-34
ICS C23C028-00
CC **72-6** (Electrochemistry)
Section cross-reference(s): 56, 76
IT 3921-30-0 **4200-55-9 7795-87-1** 13089-30-0
64569-85-3 172601-11-5
(emulsifier; sealing of gold plating pinholes on nickel-coated connectors with emulsifier-contg. inhibitor soln. for corrosion resistance and lubricity)

L36 ANSWER 4 OF 12 HCA COPYRIGHT 2002 ACS
124:94699 Pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat. Fukamachi, Kazuhiko; Hatanaka, Hiroyuki (Nippon Mining Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07258888 A2 19951009 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-53842 19940324.
AB Pore sealing of Au- or Au alloy-coated metal substrates with Ni or Ni alloy undercoat is conducted by d.c. **electrolysis** at anode c.d. .gtoreq.0.05 A/dm2 and electricity 0.05x10-3 - 50x10-3 C/dm2 using the substrates as anode in a sealing soln. prepd. by adding 0.01-5.0 wt.% self emulsifying agent to an aq. soln. contg. 10-1000 ppm cyclic N compd(s). as inhibitors which can form chelates with Ni or metal substrates. The substrates are preferably connector contacts.
IT **4200-55-9 7795-87-1**
(self emulsifying agent; pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)
RN 4200-55-9 HCA

CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



RN 7795-87-1 HCA
CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM C25D009-02
ICS C25D007-00; C25D011-34
CC 56-6 (Nonferrous Metals and Alloys)
Section cross-reference(s): 76
ST gold coated alloy sealing **electrolysis**; connector contact gold coated alloy
IT Electric contacts
Electrolysis
Sealing
(pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)
IT Paraffin waxes and Hydrocarbon waxes, uses
Petrolatum
(pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)
IT Gold alloy, base
(pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)
IT Nickel alloy, base
(pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)
IT 51-17-2, 1H-Benzimidazole 95-14-7, 1H-Benzotriazole 120-72-9, 1H-Indole, uses 149-30-4, 2(3H)-Benzothiazolethione 271-44-3, 1H-Indazole 59866-75-0
(inhibitors; pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)
IT 7440-57-5, Gold, processes 12732-18-2

(pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

IT **4200-55-9 7795-87-1** 13089-30-0 64569-85-3
172601-11-5
(self emulsifying agent; pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

IT 7440-02-0, Nickel, uses 12623-52-8
(undercoat; pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

L36 ANSWER 5 OF 12 HCA COPYRIGHT 2002 ACS

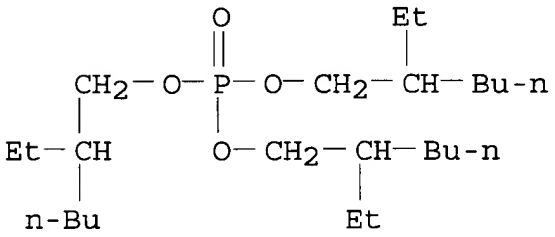
110:14942 Enhanced lifetime and adhesion of potassium ion-, ammonium ion-, and calcium ion- sensitive membranes on solid surfaces using hydroxyl-modified polyvinylchloride matrices. Harrison, D. Jed; Cunningham, Linda L.; Li, Xizhong; Teclemariam, Alem; Permann, Del (Dep. Chem., Univ. Alberta, Edmonton, AB, T6G 2G2, Can.). Journal of the Electrochemical Society, 135(10), 2473-8 (English) 1988. CODEN: JESOAN. ISSN: 0013-4651.

AB Liq.-liq. junction membranes prepd. from a modified polyvinylchloride (PVC) polymer with 0.6 wt.% OH introduced, (PVC-OH) and 0.25 wt.% SiCl4 added during casting substantially enhanced adhesion to glass or Si compared to PVC-based membranes. Ion-selective electrodes for NH4+ based on a dioctyladipate/nonactin ion exchanger show enhanced adhesion, as do Ca2+ membranes using a neutral ion carrier/o-nitrophenyloctyl ether mixt. Enhanced surface adhesion was demonstrated to result in improved lifetimefor K+-sensitive membranes coated on n-Si electrodes and on ion-sensitive field effect transistors. Electron micrographs show large differences in surface quality for PVC vs. PVC-OH/SiCl4-based membranes after aq. storage.

IT **78-42-2 20328-55-6**
(additive, in fabrication of ion-selective electrode based on polyvinylchloride modified with hydroxyl)

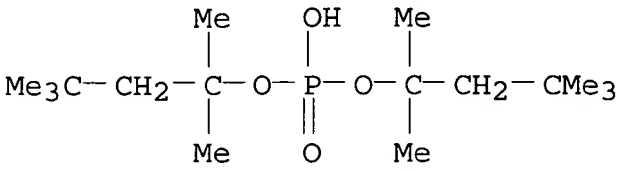
RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 20328-55-6 HCA

CN 2-Pentanol, 2,4,4-trimethyl-, hydrogen phosphate (8CI, 9CI) (CA INDEX NAME)



CC **72-2** (Electrochemistry)
Section cross-reference(s): 66, 79

IT **78-42-2** 1754-47-8, Dioctylphenylphosphonate 2001-95-8, Valinomycin 3244-41-5 6833-84-7, Nonactin **20328-55-6** 37682-29-4, o-Nitrophenyloctylether 58801-34-6, ETH 1001
(additive, in fabrication of ion-selective electrode based on polyvinylchloride modified with hydroxyl)

L36 ANSWER 6 OF 12 HCA COPYRIGHT 2002 ACS

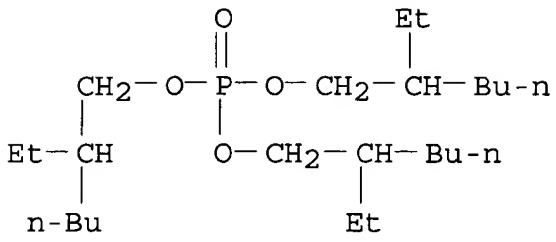
106:14901 Studies on biomimetic membranes IX. Ionic permeability and stability of supported liquid membranes. Kikkawa, Masayoshi; Sugiura, Masaaki; Shinbo, Toshio; Yamaguchi, Tomohiko; Nishimura, Koichiro; Fukaya, Toshio; Kodaka, Masato (Natl. Chem. Lab. Ind., Japan). Kagaku Gijutsu Kenkyusho Hokoku, 81(6), 301-7 (Japanese) 1986. CODEN: KGKHEP. ISSN: 0388-3213.

AB The up-hill transport rate of picrate anion across supported liq. membranes, prepd. from various org. liqs. and contg. K+ carriers, and the membrane potential with elapsed time were measured. The ionic permeability and stability of the liq. membranes and the carrier-mediated transport were discussed. When the arom. compds. such as nitrophenol derivs., arom. ethers, alkylbenzenes, and alkylbenzoates were used as the org. liq., a large flux of picrate anion was obsd. in most of these liq. membranes. In addn., the changes of membrane potentials were small because of high stability of the membranes. On the other hand, the picrate-ion flux for the alkyl dicarboxylates was small except for their Bu esters. In the case of glycerides and phosphates, the picrate flux was affected by the type of carrier. Most of these liq. membranes showed a high stability.

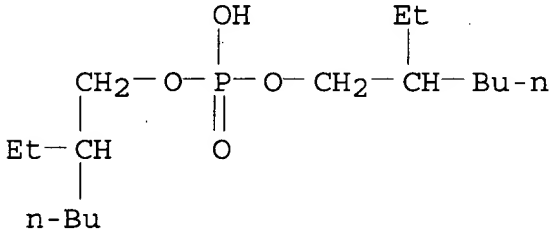
IT **78-42-2 298-07-7**
(liq. membranes, ionic permeability and stability of potassium carrier-contg.)

RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



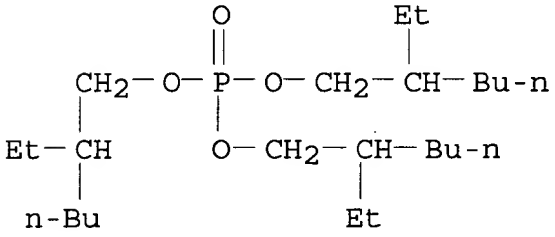
RN 298-07-7 HCA
CN Phosphoric acid, bis(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)



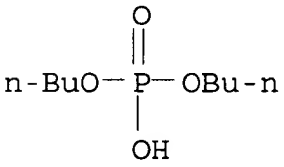
CC 6-6 (General Biochemistry)
Section cross-reference(s): 22
IT **Electrolytes**
(permeability of org. liq. membranes contg. potassium carriers to)
IT 60-01-5, Tri-n-butyrin 78-30-8 78-32-0 **78-42-2**
99-62-7, m-Diisopropylbenzene 100-18-5, p-Di-iso-propylbenzene
101-81-5, Diphenylmethane 101-84-8, Diphenyl ether 102-25-0,
1,3,5-Triethylbenzene 103-23-1 103-50-4, Dibenzyl ether
105-05-5, p-Diethylbenzene 105-75-9, Fumaric acid di-n-butyl ester
105-76-0, Maleic acid di-n-butyl ester 105-99-7, Adipic acid
di-n-butyl ester 106-19-4, Adipic acid di-n-propyl ester
109-43-3, Sebacic acid di-n-butyl ester 111-03-5,
.alpha.-Monoolein 112-80-1, Oleic acid, properties 120-50-3,
Benzoic acid iso-butyl ester 122-62-3, Sebacic acid di
(2-ethylhexyl) ester 123-25-1, Succinic acid diethyl ester
135-01-3, o-Diethylbenzene 136-60-7, Benzoic acid n-butyl ester
141-04-8, Adipic acid di-iso-butyl ester 141-05-9, Maleic acid
diethyl ester 141-28-6, Adipic acid diethyl ester 141-93-5,
m-Diethylbenzene 142-77-8 **298-07-7** 538-23-8
538-68-1, n-Amylbenzene 621-70-5 622-08-2, 2-(Benzyloxy) ethanol
624-48-6 627-93-0, Adipic acid dimethyl ester 939-48-0, Benzoic
acid iso-propyl ester 1077-16-3 1078-71-3 2049-95-8,
tert-Amylbenzene 2049-96-9 2216-12-8, o-Nitrophenyl phenyl ether
2287-83-4 2998-04-1, Adipic acid diallyl ester 4074-90-2, Adipic
acid divinyl ester 6938-94-9, Adipic acid di-isopropyl ester
7664-38-2D, esters 13023-13-7 13565-36-1, p-Nitrophenyl heptyl
ether 15440-98-9, p-Nitrophenyl hexyl ether 16507-61-2, Oleyl
chloride 37682-29-4, o-Nitrophenyl octyl ether 82052-70-8
(liq. membranes, ionic permeability and stability of potassium

carrier-contg.)

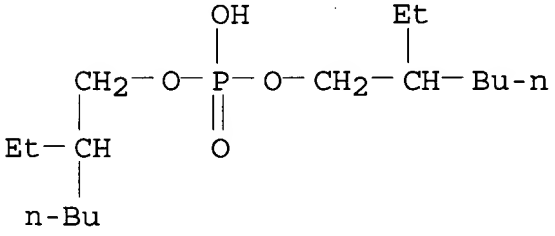
L36 ANSWER 7 OF 12 HCA COPYRIGHT 2002 ACS
104:208885 Conductive coating. Eikuchi, Kichiji; Kitamura, Hajime; Tsuchida, Michinori (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 60226569 A2 19851111 Showa, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-82378 19840424.
AB Coatings with durable elec. cond. contain polymers, powd. Cu or alloys, and phosphate esters. Thus, a mixt. of **electrolytic** Cu powder (av. size 20 .mu.) 80, Coatax LG-542 (acrylic polymer, 43% solids) 20 (as solid), and BuOPO(OH)2 0.5 part was coated on polyester film and dried to give a film with vol. sp. resistance 0.002, 0.005, and 0.01 .OMEGA.-cm after 0, 100, and 500 h, resp., at 100.degree..
IT **78-42-2 107-66-4 298-07-7 838-85-7**
(in elec. conductive coatings)
RN 78-42-2 HCA
CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



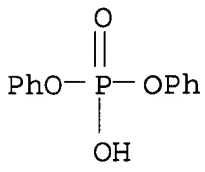
RN 107-66-4 HCA
CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 298-07-7 HCA
CN Phosphoric acid, bis(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)

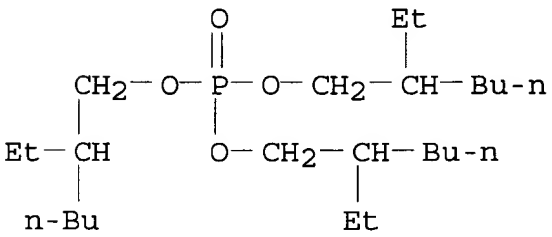


RN 838-85-7 HCA
CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)

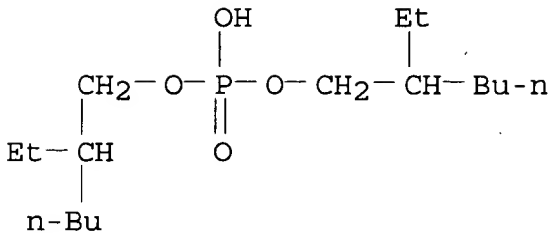


IC ICM C09D005-24
CC 42-5 (Coatings, Inks, and Related Products)
IT **78-42-2** 83-86-3 **107-66-4 298-07-7**
838-85-7 1070-03-7 1623-15-0 2627-35-2 3040-56-0
4167-12-8 14260-97-0 14260-98-1 26982-05-8 29224-31-5
32435-46-4
(in elec. conductive coatings)

L36 ANSWER 8 OF 12 HCA COPYRIGHT 2002 ACS
103:162192 Analytical characterization of phosphoric ester type industrial products. Angelescu, Anca; Ionescu, Magdalena; Ponoran, Ileana; Baloiu, Liviu Mihai; Dinca, Viorica; Gusatu, Nicolae (Acad. Stud. Econ., Bucharest, Rom.). Revistade Chimie (Bucharest, Romania), 36(6), 549-52 (Romanian) 1985. CODEN: RCBUAU. ISSN: 0034-7752.
AB The anal. characterization of the surface-active industrial products based on ethoxylated phosphoric esters without a previous sepn. was performed by correlating thin-layer chromatog. data with the results of potentiometric titrn. in **nonaq**. media and of IR quant. spectrophotometric data.
IT **78-42-2 298-07-7**
(potentiometric titrn. of, as model for ethoxylated alkyl phosphate surfactants)
RN 78-42-2 HCA
CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)

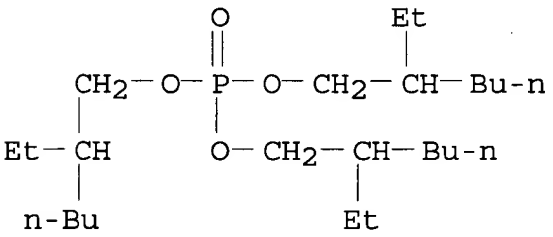


RN 298-07-7 HCA
CN Phosphoric acid, bis(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)

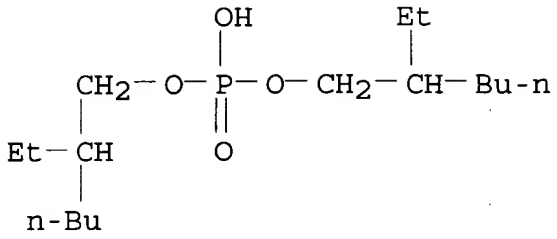


CC 46-3 (Surface Active Agents and Detergents)
IT **78-42-2 298-07-7** 1070-03-7
(potentiometric titrn. of, as model for ethoxylated alkyl phosphate surfactants)

L36 ANSWER 9 OF 12 HCA COPYRIGHT 2002 ACS
93:215001 Method and apparatus for detecting zinc ion activity. Fiedler-Linnersund, Ulla M.; Bhatti, Khan M.; Johansson, Gillis (Swed.). U.S. US 4224114 19800923, 7 pp. (English). CODEN: USXXAM. APPLICATION: US 1979-41743 19790524.
AB An ion-selective electrode is described for detg. Zn2+ activity in solns. The electrode membrane contains a liq. ion exchanger, e.g. di-2-ethylhexyl phosphate; solvent, e.g. tri-2-ethylhexyl phosphate and PVC. The selectivity coeffs. of the electrode towards diverse cations are given.
IT **78-42-2**
(as solvent, in zinc-selective electrode membrane)
RN 78-42-2 HCA
CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



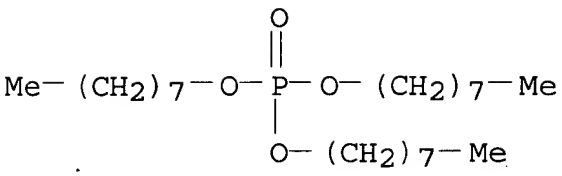
IT **25000-32-2**
(in zinc-selective electrode membrane)
RN 25000-32-2 HCA
CN Phosphoric acid, bis(2-ethylhexyl) ester, zinc salt (8CI, 9CI) (CA INDEX NAME)



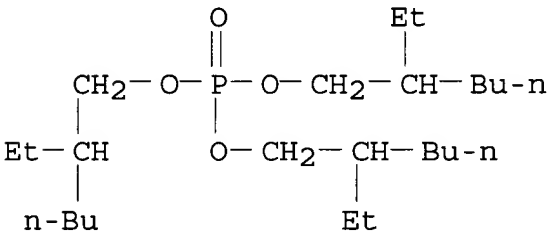
● 1/2 Zn

IC G01N027-30; G01N027-46
NCL 204001000T
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): **72**
IT **78-42-2**
(as solvent, in zinc-selective electrode membrane)
IT 9002-86-2 **25000-32-2**
(in zinc-selective electrode membrane)

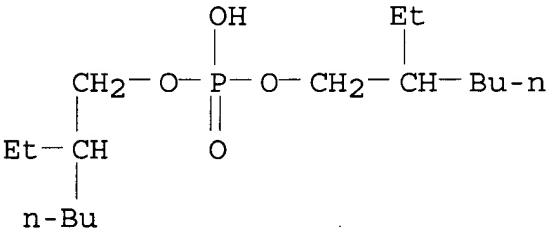
L36 ANSWER 10 OF 12 HCA COPYRIGHT 2002 ACS
92:121070 Development of polymeric membranes for zinc ion-selective electrodes. Fiedler-Linnersund, Ulla; Bhatti, Khan M. (Dep. Anal. Chem., Univ. Lund, Lund, S 220 07, Swed.). Analytica Chimica Acta, 111(1), 57-70 (English) 1979. CODEN: ACACAM. ISSN: 0003-2670.
AB Several polymeric membranes for Zn ion-selective electrodes were investigated. By optimizing the choice of solvent mediator and ligand, selectivity for Zn ions can be obtained. The applicability of a theory proposing membrane selectivities as a results of both solvent and site properties is demonstrated. The concept of soly. parameters is used in discussing the detection limits obtained. The best electrode is based on a PVC membrane contg. the Zn salt of bis(2-ethylhexyl) phosphoate disolved in tri(2-ethylhexyl) phosphate. It is the first ion-selective electrode which responds primarily to Zn. The sensor, which has a lifetime of a least 2 mo, is characterized by a rapid response, potential stability and good sensitivity caused by a super-Nernstian slope (43.8 mV/pZn); the detection limit is 4.5 .+-. 0.1 pZn.
IT **1806-54-8**
(as solvent mediator for polymeric membranes, zinc-selective electrode response in relation to)
RN 1806-54-8 HCA
CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



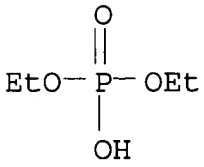
IT **78-42-2**
(as solvent mediator in polymeric membranes for zinc-selective electrodes)
RN 78-42-2 HCA
CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



IT **25000-32-2**
(in polymeric membranes for zinc-selective electrodes)
RN 25000-32-2 HCA
CN Phosphoric acid, bis(2-ethylhexyl) ester, zinc salt (8CI, 9CI) (CA INDEX NAME)

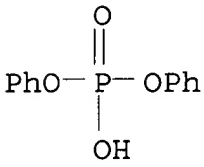


IT **4615-25-2 31411-06-0 73008-55-6 73008-56-7**
(polymeric membranes contg., selectivity in response of, in zinc-selective electrodes)
RN 4615-25-2 HCA
CN Phosphoric acid, diethyl ester, zinc salt (8CI, 9CI) (CA INDEX NAME)



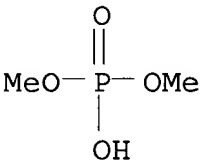
1/2 Zn

RN 31411-06-0 HCA
CN Phosphoric acid, diphenyl ester, zinc salt (8CI, 9CI) (CA INDEX NAME)



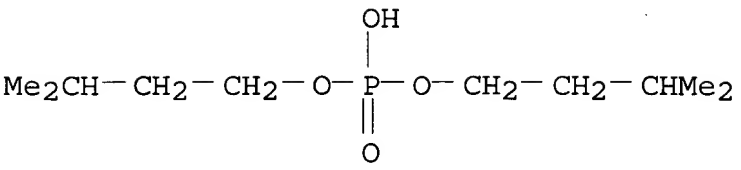
1/2 Zn

RN 73008-55-6 HCA
CN Phosphoric acid, dimethyl ester, zinc salt (9CI) (CA INDEX NAME)



1/2 Zn

RN 73008-56-7 HCA
CN 1-Butanol, 3-methyl-, hydrogen phosphate, zinc salt (9CI) (CA INDEX NAME)



● 1/2 Zn

CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): **72**

IT 78-46-6 112-30-1 1754-47-8 **1806-54-8** 6418-56-0
(as solvent mediator for polymeric membranes, zinc-selective electrode response in relation to)

IT **78-42-2**
(as solvent mediator in polymeric membranes for zinc-selective electrodes)

IT **25000-32-2**
(in polymeric membranes for zinc-selective electrodes)

IT **4615-25-2 31411-06-0** 72732-62-8 72971-81-4
73008-55-6 73008-56-7 73008-57-8 73019-97-3
73019-98-4 73019-99-5 73020-00-5
(polymeric membranes contg., selectivity in response of, in zinc-selective electrodes)

L36 ANSWER 11 OF 12 HCA COPYRIGHT 2002 ACS

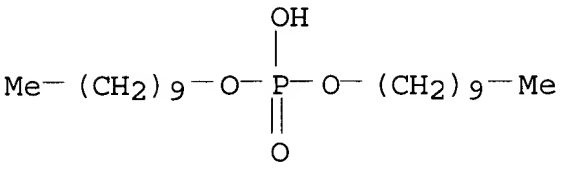
85:86589 Studies on the role of the solvent on the selectivity of the calcium liquid membrane electrode. Garbett, K. (Cent. Electr. Res. Lab., Leatherhead/Surrey, Engl.). Proc. Anal. Div. Chem. Soc., 12(2), 60-4 (English) 1975. CODEN: PADSDZ.

AB Direct solvent interactions, in which steric interactions play a significant role, are responsible for the obsd. influence of solvents on selectivity of Ca liq. membrane electrodes with membranes formed from solns. contg. 0.1 wt.% Ca bis(di-n-decyl phosphate) (I) in org. solvents satd. with H2O: highest selectivity for Ca was obsd. with tri-n-alkyl phosphate solvents with long-chain alkyl groups. The lower limits of Nernstian response and the selectivity consts. were detd. The variations in the response to Ca, Cu, Mg, Ni, and Na were detd. for electrodes prepd. from I solns. in C5-8 and C10 alcs., tri-n-alkyl phosphates (C3-8 and C10), and 10 isomeric octanol solvents. Satisfactory electrodes could not be prepd. from I solns. in other solvents (nitrobenzene, toluene, n-decane, diisobutyl ketone, Bu2O, or Bu propionate).

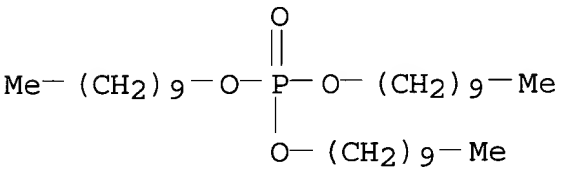
IT **21192-46-1**
(in calcium-selective liq.-membrane electrode)

RN 21192-46-1 HCA

CN Phosphoric acid, didecyl ester, calcium salt (8CI, 9CI) (CA INDEX NAME)



IT **4200-55-9**
(solvent effect of, on selectivity of calcium liq.-membrane electrodes contg. calcium bis(didecyl phosphate))
RN 4200-55-9 HCA
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



CC 79-1 (Inorganic Analytical Chemistry)
Section cross-reference(s): **72**
IT **21192-46-1**
(in calcium-selective liq.-membrane electrode)
IT **4200-55-9**
(solvent effect of, on selectivity of calcium liq.-membrane electrodes contg. calcium bis(didecyl phosphate))

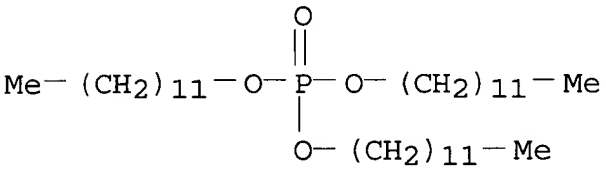
L36 ANSWER 12 OF 12 HCA COPYRIGHT 2002 ACS
56:19446 Original Reference No. 56:3732b-e Thixotropic lubricants containing reaction products of abietylamine and organic phosphates. Eisenhauer, Roy J.; Zajac, Stephen J. (Standard Oil Co. (Indiana)). US 3000820 19590415 (Unavailable). APPLICATION: US .
AB The reaction product of abietylamine with a dialkyl, diaryl, or atkyl aryl phosphate and a fatty acid forms a thixotropic thickening agent which is capable of suspending .gtoreq.40% by wt. of a finely divided solid in the base oil. The thickened compns. are obtained by heating 1-3 moles of amine with 2-1 moles of phosphate and 1-0.05 mole of acid in the base oil at 50-250.degree.F. with stirring. Highest yields are obtained when the amine and phosphate are added to the oil first, followed by the fatty acid. The finely divided solid may be added at any time; the finished product requires no milling. The thickening agent comprises 0.5-10% by wt. of the final compn. A preferred amine is Rosin Amine D (dehydroabietylamine 60, dihydroabietylamine 30, tetrahydroabietylamine 10%), preferred phosphates are diethyl, dilauryl, and diphenyl, the preferred fatty

acid is oleic or its com. mixts. Base oils are silicone polymers, particularly Dow Coming 550 Silicone Fluid (phenyl methyl silicone polymer), mineral oils, synthetic hydrocarbons, polyalkylene glycols, dicarboxylic acid esters, polyfluoro org. compds., etc. Solids which may be suspended include finely divided pigments and extenders and graphite.

IT **682-49-5**, Dodecyl phosphate, (C12H25O)3PO **838-85-7**, Phenyl phosphate, (PhO)2(HO)PO
(reaction products with abietylamine derivs. and oleic acid, as lubricant thixotropic additives)

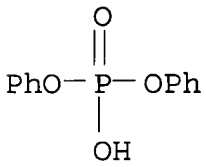
RN 682-49-5 HCA

CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 838-85-7 HCA

CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



CC **52** (Petroleum and Petroleum Derivatives)

IT **682-49-5**, Dodecyl phosphate, (C12H25O)3PO **838-85-7**, Phenyl phosphate, (PhO)2(HO)PO 7664-38-2, Phosphoric acid
(reaction products with abietylamine derivs. and oleic acid, as lubricant thixotropic additives)

=> d l37 1-7 cbib abs hitstr hitind

L37 ANSWER 1 OF 7 HCA COPYRIGHT 2002 ACS

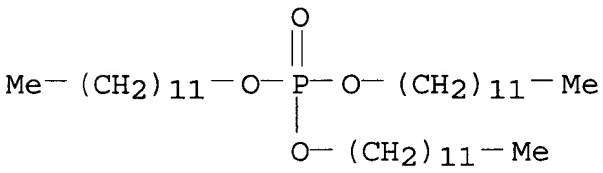
134:44552 Secondary **nonaqueous electrolyte batteries** and their manufacture. Takezawa, Hideharu; Bito, Yasuhiko; Matsuda, Hiromu; Toyoguchi, Yoshinori (Matsushita Electric Industrial Co., Ltd., Japan). PCT Int. Appl. WO 2000076016 A1 20001214, 39 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP3581 20000601. PRIORITY: JP 1999-158615 19990604.

AB The **batteries** use cathodes, anodes, and/or Li salt **electrolyte** solns. contg. tri C7-12-alkyl phosphate, di C1-12-alkyl or di-aryl phosphate, and/or mono C1-12 alkyl phosphate or mono-aryl phosphate. The **batteries** are prepd. by using

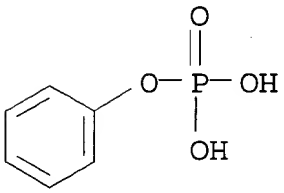
an electrode active mass, active mass paste, and/or electrodes contg. the phosphate ester.

IT **682-49-5**, Tridodecyl phosphate **701-64-4**, Monophenyl phosphate **812-00-0**, Monomethyl phosphate **1623-06-9**, Monopropyl phosphate **1623-14-9**, Monoethyl phosphate **1623-15-0**, Monobutyl phosphate **1806-54-8**, Trioctyl phosphate **2382-76-5**, Monopentyl phosphate **2627-35-2**, Monododecyl phosphate **3900-03-6**, Monoheptyl phosphate **3900-04-7**, Monohexyl phosphate **3921-30-0**, Monodecyl phosphate **3991-73-9**, Monooctyl phosphate **4200-55-9**, Tridecyl phosphate **4621-50-5**, Triheptyl phosphate **13018-37-6**, Trinonyl phosphate **36047-43-5**, Monononyl phosphate **36047-45-7**, Monoundecyl phosphate **312636-94-5**
(phosphate ester additives in electrodes and **electrolyte** solns. for secondary lithium **batteries**)

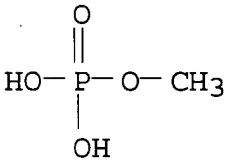
RN 682-49-5 HCA
CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



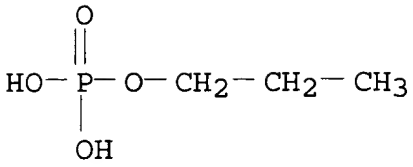
RN 701-64-4 HCA
CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



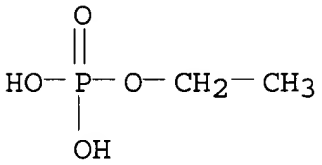
RN 812-00-0 HCA
CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



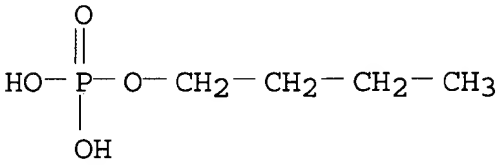
RN 1623-06-9 HCA
CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



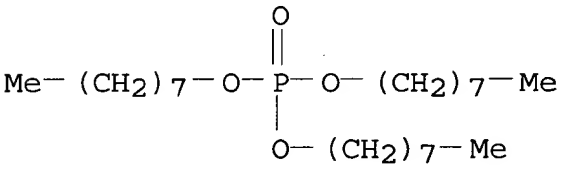
RN 1623-14-9 HCA
CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)



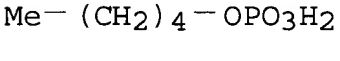
RN 1623-15-0 HCA
CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



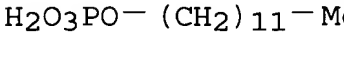
RN 1806-54-8 HCA
CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



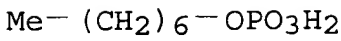
RN 2382-76-5 HCA
CN Phosphoric acid, monopentyl ester (8CI, 9CI) (CA INDEX NAME)



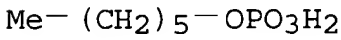
RN 2627-35-2 HCA
CN Phosphoric acid, monododecyl ester (8CI, 9CI) (CA INDEX NAME)



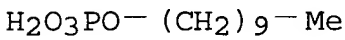
RN 3900-03-6 HCA
CN Phosphoric acid, monoheptyl ester (8CI, 9CI) (CA INDEX NAME)



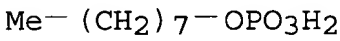
RN 3900-04-7 HCA
CN Phosphoric acid, monohexyl ester (8CI, 9CI) (CA INDEX NAME)



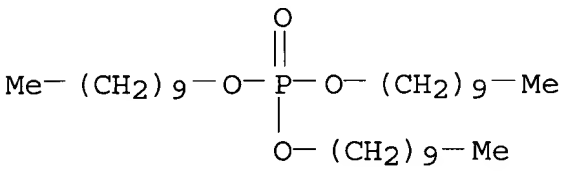
RN 3921-30-0 HCA
CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)



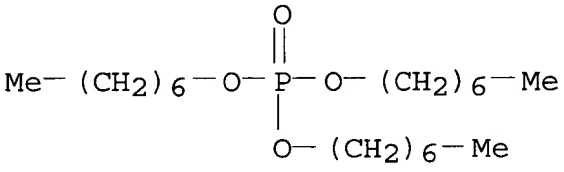
RN 3991-73-9 HCA
CN Phosphoric acid, monooctyl ester (9CI) (CA INDEX NAME)



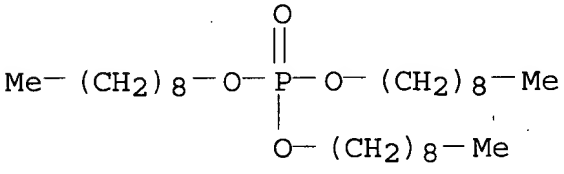
RN 4200-55-9 HCA
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



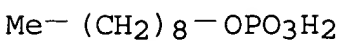
RN 4621-50-5 HCA
CN Phosphoric acid, triheptyl ester (8CI, 9CI) (CA INDEX NAME)



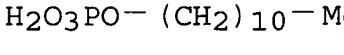
RN 13018-37-6 HCA
CN Phosphoric acid, trinonyl ester (8CI, 9CI) (CA INDEX NAME)



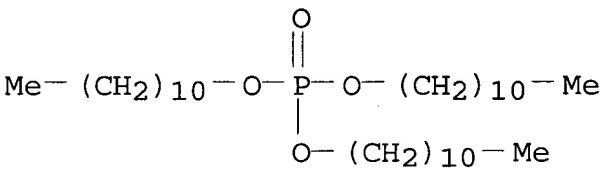
RN 36047-43-5 HCA
CN Phosphoric acid, monononyl ester (9CI) (CA INDEX NAME)



RN 36047-45-7 HCA
CN 1-Undecanol, dihydrogen phosphate (9CI) (CA INDEX NAME)



RN 312636-94-5 HCA
CN 1-Undecanol, phosphate (3:1) (9CI) (CA INDEX NAME)



IC ICM H01M010-40
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium **battery** phosphate ester additive
IT Secondary **batteries**
(lithium; electrodes and **electrolyte** solns. contg. phosphate ester additives for secondary lithium **batteries**)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 7440-44-0, Carbon, uses 7791-03-9, Lithium perchlorate 12190-79-3, Cobalt lithium oxide (CoLiO2)
(electrodes and **electrolyte** solns. contg. phosphate ester additives for secondary lithium **batteries**)
IT 107-66-4, Dibutyl phosphate 598-02-7, Diethyl phosphate **682-49-5**, Tridodecyl phosphate **701-64-4**, Monophenyl phosphate **812-00-0**, Monomethyl phosphate 813-78-5, Dimethyl phosphate 838-85-7, Diphenyl phosphate **1623-06-9**, Monopropyl phosphate **1623-14-9**, Monoethyl phosphate **1623-15-0**, Monobutyl phosphate 1804-93-9, Dipropyl phosphate **1806-54-8**, Trioctyl phosphate **2382-76-5**, Monopentyl phosphate **2627-35-2**, Monododecyl phosphate 3115-39-7, Dioctyl phosphate 3138-42-9, Dipentyl phosphate 3138-43-0, Dinonyl phosphate **3900-03-6**, Monoheptyl phosphate **3900-04-7**, Monohexyl phosphate 3900-12-7, Diheptyl phosphate 3900-13-8, Dihexyl phosphate **3921-30-0**, Monodecyl phosphate **3991-73-9**, Monooctyl phosphate **4200-55-9**, Tridecyl phosphate **4621-50-5**, Triheptyl phosphate 7057-92-3, Didodecyl phosphate 7598-64-3, Diundecyl phosphate 7795-87-1, Didecyl phosphate **13018-37-6**,

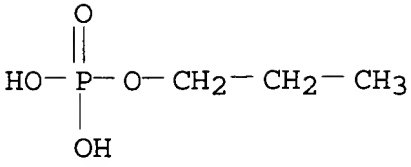
Trinonyl phosphate 19541-53-8 **36047-43-5**, Monononyl phosphate **36047-45-7**, Monoundecyl phosphate 54653-10-0 54653-24-6 86052-84-8 130675-91-1 130675-92-2 160087-64-9 **312636-94-5** 312636-95-6 312636-96-7 312636-97-8 312636-98-9 312636-99-0
(phosphate ester additives in electrodes and **electrolyte** solns. for secondary lithium **batteries**)

L37 ANSWER 2 OF 7 HCA COPYRIGHT 2002 ACS
132:287557 Aluminum **electrolytic** capacitor with no flash point or degradation. Tsubaki, Yuichiro; Matsuura, Hiroyuki; Morokuma, Munehiro; Minato, Koichiro; Nitta, Yukihiro (Matsushita Electric Industrial Co., Ltd., Japan). Eur. Pat. Appl. EP 996134 A2 20000426, 20 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-120360 19991013. PRIORITY: JP 1998-290333 19981013; JP 1999-255249 19990909.

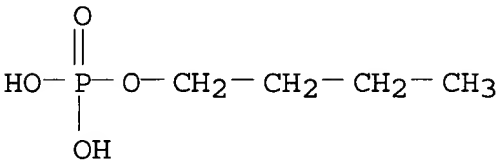
AB The present invention aims to provide a highly reliable Al **electrolytic** capacitor which has no flash points and shows little change or degrdn. in external appearance and properties. The H2O content of **electrolytic** soln. of the **electrolytic** capacitor of this invention is 20-90% and one or more following compds. are included as main **electrolytes** in the **electrolytic** soln. ; ammonium formate, ammonium acetate, ammonium lactate, ammonium glycolate, ammonium oxalate, ammonium succinate, ammonium malonate, ammonium adipate, ammonium benzoate, ammonium glutarate, and ammonium azelate. The **electrolytic** soln. also contains .gtoreq.1% of one or more compds. selected from org. carboxylic acids with a particular structure and ammonium salts of these org. acids. The m.p. of the **electrolytic** soln. is -10.degree. and under, the Cl content of a sealing material of the capacitor is .ltoreq.300 ppm to the wt. of the sealing material. The impedance ratio of 20.degree., 100 kHz to-10.degree., 100 kHz of the Al **electrolytic** capacitor is .ltoreq.4. The present invention can provide a highly reliable Al **electrolytic** capacitor of rated voltage of under 100 V, which achieves superior impedance and low temp. properties, and has little risk of ignition even when the **electrolytic** soln. is released.

IT **1623-06-9**, Monopropyl phosphate **1623-15-0**, Monobutyl phosphate **1806-54-8**, Trioctyl phosphate **3900-04-7**, Monohexyl phosphate **3921-30-0**, Monodecyl phosphate **3991-73-9**, Monooctyl phosphate **4200-55-9**, Tridecyl phosphate
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)

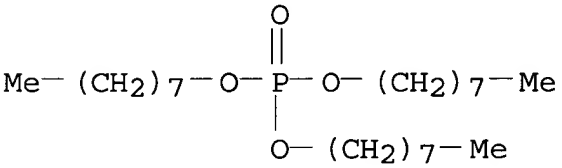
RN 1623-06-9 HCA
CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



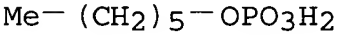
RN 1623-15-0 HCA
CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



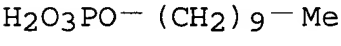
RN 1806-54-8 HCA
CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



RN 3900-04-7 HCA
CN Phosphoric acid, monohexyl ester (8CI, 9CI) (CA INDEX NAME)

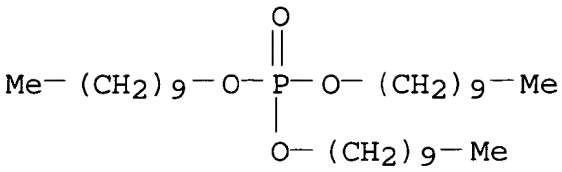


RN 3921-30-0 HCA
CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 3991-73-9 HCA
CN Phosphoric acid, monooctyl ester (9CI) (CA INDEX NAME)

RN 4200-55-9 HCA
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



IC ICM H01G009-035
CC 76-10 (Electric Phenomena)
Section cross-reference(s): 38
ST aluminum **electrolytic** capacitor; **electrolyte** ammonium carboxylate capacitor; phosphate ester **electrolytic** capacitor; silicone **electrolytic** capacitor; silane **electrolytic** capacitor; carboxylic acid capacitor
IT Synthetic rubber, uses
(Isobutylene isopropylene; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Silanes
(alkoxy; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT **Electrolytic** capacitors
(aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Carboxylic acids, uses
(ammonium salts; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT **Electrolytes**
Sealing
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Butyl rubber, uses
Carboxylic acids, uses
Polyoxyalkylenes, uses
Polysiloxanes, uses
Silanes
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Alcohols, uses
(polyhydric; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Coupling agents
(silane; for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT Ethylene-propylene rubber
(terpolymer; aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT 7429-90-5, Aluminum, uses
(aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
IT 9010-85-9
(butyl rubber, for aluminum **electrolytic** capacitor with

nobelium flash point or degrdn.)

IT 9010-79-1
(ethylene-propylene rubber, terpolymer; aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)

IT 62-23-7, p-Nitrobenzoic acid 78-40-0, Triethyl phosphate 88-75-5, o-Nitrophenol 91-23-6, o-Nitroanisole 100-02-7, p-Nitrophenol, uses 100-17-4, p-Nitroanisole 107-21-1, Ethylene glycol, uses 111-20-6, Sebacic acid, uses 121-92-6, m-Nitrobenzoic acid 124-04-9D, Adipic acid, tri-Me derivs. 512-56-1, Trimethyl phosphate 513-08-6, Tripropyl phosphate 515-98-0, Ammonium lactate 540-69-2, Ammonium formate 552-16-9, o-Nitrobenzoic acid 554-84-7, m-Nitrophenol 555-03-3, m-Nitroanisole 598-02-7, Diethyl phosphate 631-61-8, Ammonium acetate 813-78-5, Dimethyl phosphate 1113-38-8, Ammonium oxalate **1623-06-9**, Monopropyl phosphate **1623-15-0**, Monobutyl phosphate 1804-93-9, Dipropyl phosphate **1806-54-8**, Trioctyl phosphate 1863-63-4, Ammonium benzoate 2226-88-2, Ammonium succinate 2466-09-3, Pyrophosphoric acid 2528-39-4, Trihexyl phosphate 3115-39-7 **3900-04-7**, Monohexyl phosphate 3900-13-8, Dihexyl phosphate **3921-30-0**, Monodecyl phosphate **3991-73-9**, Monooctyl phosphate **4200-55-9**, Tridecyl phosphate 6303-21-5, Hypophosphorous acid 7664-38-2D, Phosphoric acid, alkyl esters, uses 7723-14-0D, Phosphorus, org. compds., uses 7795-87-1, Didecyl phosphate 7803-65-8 9003-11-6, Ethylene oxide-propylene oxide copolymer 10347-88-3, 3-Tert-Butyladipic acid 18815-40-2, Ammonium malonate 19090-60-9, Ammonium adipate 25322-68-3, Polyethyleneglycol 29750-34-3, Ammonium glutarate 35249-89-9, Ammonium glycolate 44636-58-0 50905-10-7, Decane-1,6-dicarboxylic acid 82169-85-5, Ammonium azelate 83797-34-6 85090-57-9 88107-08-8 220208-63-9 260059-62-9 263863-41-8
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)

L37 ANSWER 3 OF 7 HCA COPYRIGHT 2002 ACS

127:100973 Sealing of pinholes of gold plating on electric connectors. Fukamachi, Kazuhiko; Hatanaka, Hiroyuki (Nippon Mining Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09170096 A2 19970630 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-330474 19951219.

AB Au (alloy)-plated and Ni (alloy)-deposited connectors are treated by d.c. **electrolysis** at voltage E 0.1-5.0 V with the Au plating as an anode in an emulsion soln. prepd. by adding 0.01-5.0 wt.% self-emulsifier to an inhibitor aq. soln. to fill the pinholes of the Au plating. The soln. preferably contains .gtoreq.1 cyclic N compd. forming chelates with Ni or a substrate metal in total 10-1000 ppm as an inhibitor. The treated connectors show high corrosion resistance, excellent stability of elec. contacts, and improved lubricity.

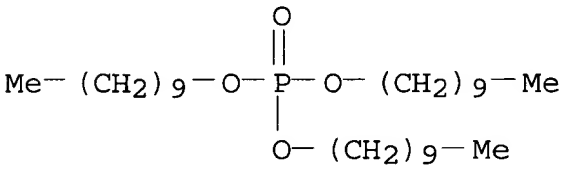
IT **3921-30-0 4200-55-9**
(emulsifier; sealing of gold plating pinholes on nickel-coated

connectors with emulsifier-contg. inhibitor soln. for corrosion resistance and lubricity)

RN 3921-30-0 HCA
CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)

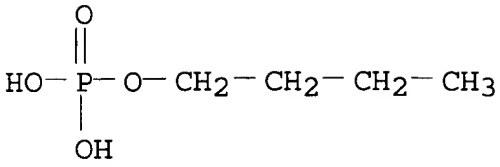
$H_2O_3PO-(CH_2)_9-Me$

RN 4200-55-9 HCA
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)

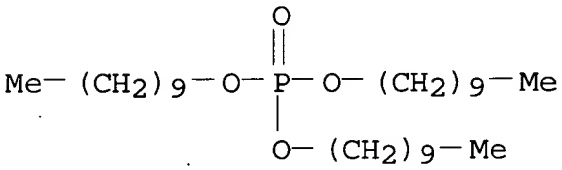


IC ICM C25D011-34
ICS C23C028-00
CC **72-6** (Electrochemistry)
Section cross-reference(s): 56, 76
IT **3921-30-0 4200-55-9** 7795-87-1 13089-30-0
64569-85-3 172601-11-5
(emulsifier; sealing of gold plating pinholes on nickel-coated connectors with emulsifier-contg. inhibitor soln. for corrosion resistance and lubricity)

L37 ANSWER 4 OF 7 HCA COPYRIGHT 2002 ACS
114:198047 **Electrolytic** solution containing phosphoric acid derivative for capacitor. Washio, Yukari; Takeishi, Nobuhiro; Shimamoto, Hideki; Mori, Keiji; Ushio, Noriki; Kishi, Takaaki; Shiono, Kazuji (Matsushita Electric Industrial Co., Ltd., Japan; Sanyo Chemical Industries, Ltd.). Jpn. Kokai Tokkyo Koho JP 02264414 A2 19901029 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1989-85452 19890404.
AB The title soln. contains a quaternary ammonium borate as an **electrolyte** and phosphoric acid and/or an alkyl phosphate. An **electrolytic** capacitor using a soln. comprising .gamma.-butyrolactone, Et4N borate, and monobutyl phosphate showed high spark voltage.
IT **1623-15-0**, Monobutyl phosphate **4200-55-9**, Tridecyl phosphate
(**electrolytic** soln. contg., with quaternary ammonium salt **electrolyte**, for capacitor)
RN 1623-15-0 HCA
CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



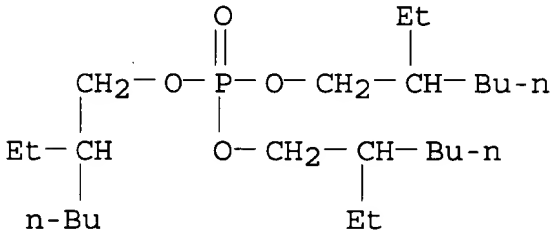
RN 4200-55-9 HCA
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



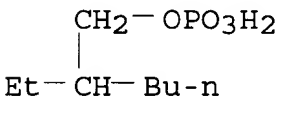
IC ICM H01G009-02
CC 76-10 (Electric Phenomena)
ST **electrolytic** soln phosphoric acid ester; quaternary ammonium borate **electrolyte** capacitor; ethylammonium borate **electrolyte electrolytic** capacitor; butyl phosphate **electrolytic** soln capacitor
IT Quaternary ammonium compounds, uses and miscellaneous
(**electrolyte**, for **electrolytic** soln., for capacitor, phosphoric acid and/or alkyl phosphate in)
IT Electric capacitors
(**electrolytic**, **electrolytic** soln. for, quaternary ammonium borate **electrolyte** and phosphoric acid and/or alkyl phosphate in)
IT 133405-81-9 133517-72-3
(**electrolyte**, for **electrolytic** soln., for capacitor, phosphoric acid and/or alkyl phosphate in)
IT 512-56-1, Methyl phosphate **1623-15-0**, Monobutyl phosphate **4200-55-9**, Tridecyl phosphate
(**electrolytic** soln. contg., with quaternary ammonium salt **electrolyte**, for capacitor)

L37 ANSWER 5 OF 7 HCA COPYRIGHT 2002 ACS
104:208885 Conductive coating. Eikuchi, Kichiji; Kitamura, Hajime; Tsuchida, Michinori (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 60226569 A2 19851111 Showa, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-82378 19840424.
AB Coatings with durable elec. cond. contain polymers, powd. Cu or alloys, and phosphate esters. Thus, a mixt. of **electrolytic** Cu powder (av. size 20 .mu.) 80, Coatax LG-542 (acrylic polymer, 43% solids) 20 (as solid), and BuOPO(OH)2 0.5 part was coated on polyester film and dried to give a film with vol. sp. resistance 0.002, 0.005, and 0.01 .OMEGA.-cm after 0, 100, and 500 h, resp., at 100.degree..
IT **78-42-2 1070-03-7 1623-15-0**

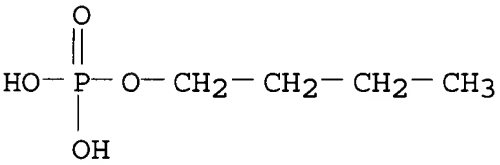
2627-35-2
(in elec. conductive coatings)
RN 78-42-2 HCA
CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



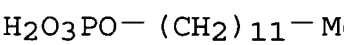
RN 1070-03-7 HCA
CN Phosphoric acid, mono(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)



RN 1623-15-0 HCA
CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 2627-35-2 HCA
CN Phosphoric acid, monododecyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM C09D005-24
CC 42-5 (Coatings, Inks, and Related Products)
IT **78-42-2** 83-86-3 107-66-4 298-07-7 838-85-7
1070-03-7 1623-15-0 2627-35-2
3040-56-0 4167-12-8 14260-97-0 14260-98-1 26982-05-8
29224-31-5 32435-46-4
(in elec. conductive coatings)

L37 ANSWER 6 OF 7 HCA COPYRIGHT 2002 ACS
103:162192 Analytical characterization of phosphoric ester type industrial products. Angelescu, Anca; Ionescu, Magdalena; Ponoran, Ileana; Baloiu, Liviu Mihai; Dinca, Viorica; Gusatu, Nicolae (Acad.

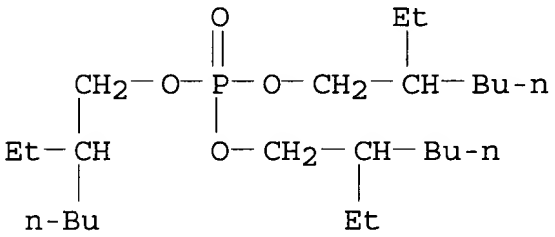
Stud. Econ., Bucharest, Rom.). Revistade Chimie (Bucharest, Romania), 36(6), 549-52 (Romanian) 1985. CODEN: RCBUAU. ISSN: 0034-7752.

AB The anal. characterization of the surface-active industrial products based on ethoxylated phosphoric esters without a previous sepn. was performed by correlating thin-layer chromatog. data with the results of potentiometric titrn. in **nonaq**. media and of IR quant. spectrophotometric data.

IT **78-42-2 1070-03-7**
(potentiometric titrn. of, as model for ethoxylated alkyl phosphate surfactants)

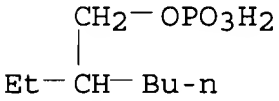
RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1070-03-7 HCA

CN Phosphoric acid, mono(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)



CC 46-3 (Surface Active Agents and Detergents)

IT **78-42-2** 298-07-7 **1070-03-7**
(potentiometric titrn. of, as model for ethoxylated alkyl phosphate surfactants)

L37 ANSWER 7 OF 7 HCA COPYRIGHT 2002 ACS

64:55160 Original Reference No. 64:10345f-h Synergism of malathion and parathion against resistant insects, phosphorus esters with synergistic properties. Plapp, Frederick W., Jr.; Tong, Homer H. C. (Entomol Res. Div., U.S. Dept. of Agr., Corvallis, OR). J. Econ. Entomol., 59(1), 11-15 (English) 1966.

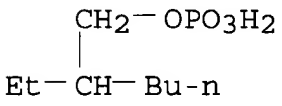
AB Many P esters were evaluated as synergists for malathion against resistant strains of the housefly, Musca domestica, and the mosquito Culex tarsalis. Several were tested as synergists for parathion against parathion-resistant houseflies. S,S,S- and O,S,S-trialkyl and mixed alkyl phosphorothioites and phosphorothioates synergized malathion and (or) parathion against both insect species. With mosquitoes, Bu-contg. esters were most effective; with flies, esters contg. iso-Pr, Pr, or Bu groups were strongly synergistic.

S,S-dialkyl O- or S-phenyl phosphorothioites also were active. O,O,O-triphenyl phosphorus compds. synergized malathion against both species; their S,S,S-triphenyl analogs were much less active. In general, tolyl and other substituted phenyl phosphates were malathion synergists against resistant mosquitoes only. The materials synergizing malathion against resistant insects differed considerably from those known to potentiate the toxicity of malathion to mice or to cause ataxia in chickens.

IT **1070-03-7**, 1-Hexanol, 2-ethyl-, phosphate
(P insecticide synergism by)

RN 1070-03-7 HCA

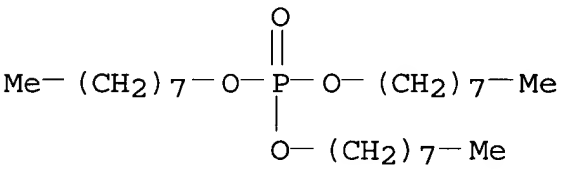
CN Phosphoric acid, mono(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)



IT **1806-54-8**, Octyl phosphate, (C8H17O)3PO
(phosphorus insecticide synergism by)

RN 1806-54-8 HCA

CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



CC **72** (Pesticides)

IT **1070-03-7**, 1-Hexanol, 2-ethyl-, phosphate 3862-08-6, Phenol, o-ethyl-, phosphate 27856-12-8, Phenol, p-methoxy-, phosphate 50917-36-7, Phenol, p-ethyl-, phosphate 90001-11-9, Phenol, m-methoxy-, phosphate
(P insecticide synergism by)

IT 78-32-0, p-Tolyl phosphate, (C7H7O)3PO 121-06-2, 2,6-Xylyl phosphate, (C8H9O)3PO 597-82-0, Phenyl phosphorothioate, (PhO)3PS 597-83-1, Phenyl phosphorotrithioate, (PhS)3PO 1095-04-1, Phenyl phosphorotrithioite, (PhS)3P 1486-39-1, Ethyl phosphorotrithioate, (EtS)3PO 1642-44-0, Propyl phosphorotrithioate, (PrS)3PO **1806-54-8**, Octyl phosphate, (C8H17O)3PO 2510-86-3, Ethyl phenyl phosphate, (EtO)2(PhO)PO 3347-30-6, Ethyl phosphorotrithioate, (EtO)(EtS)2PS 3819-69-0, Butyl ethyl phosphorodithioite, (BuS)2(EtO)P 3862-11-1, 3,4-Xylyl phosphate, (C8H9O)3PO 3862-17-7, Phosphorodithious acid, S,S-dibutyl O-p-chlorophenyl ester 3862-18-8, Dodecyl phosphorotrithioate, (C12H25S)3PO 3871-23-6, 4-Biphenylyl phosphate, (C12H9O)3PO 3871-31-6, Phenol, p-chloro-, phosphate 3957-62-8, Methanethiol, trichloro-, S-ester with O,O-diiso-Pr phosphorothioate 3957-64-0, Hydroquinone, phosphate 12778-12-0, Phenol, p-nitro-, phosphate

13388-91-5, Phenol, m-nitro-, phosphate 13421-39-1, Phenol, p-tert-butyl-, phosphate 14614-76-7, Phenol, 2,4,6-trichloro-, phosphate 14614-78-9, Phenol, pentachloro-, phosphate 25022-72-4, Allyl phosphate 25653-16-1, 3,5-Xylyl phosphate, (C8H9O)3PO 26444-49-5, Phenyl tolyl phosphate, (PhO)2(C7H7O)PO 100352-16-7, Cresol, .alpha.-chloro-, phosphate
(phosphorus insecticide synergism by)

=> d l39 1-6 cbib abs hitstr hitind

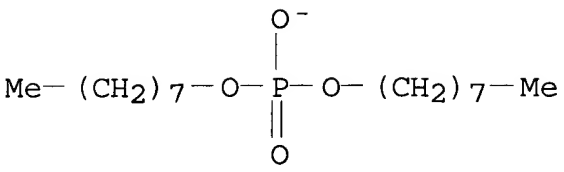
L39 ANSWER 1 OF 6 HCA COPYRIGHT 2002 ACS
137:241454 Alkyl-chain selective analysis of phosphoric acid esters with **non-aqueous** capillary electrophoresis. Grob, Miriam; Steiner, Frank (Instrumental Analysis and Bioanalysis, Saarland University, Saarbruecken, 66041, Germany). Journal of Separation Science, 25(9), 615-618 (English) 2002. CODEN: JSSCCJ. ISSN: 1615-9306. Publisher: Wiley-VCH Verlag GmbH.

AB **Nonaq**. capillary electrophoresis proved to be an efficient technique for the anal. of phosphoric acid esters. Using an **electrolyte** based on N-methylformamide, short chain phosphoric acid esters and water insol. long chain phosphoric acid esters were analyzed simultaneously. The background **electrolyte** consisted of 15 mM ammonium anthraquinonesulfonate as background chromophore for indirect detection, 10 mM triethylamine, and 0.001% polybrene. It allowed detn. of the alkyl chain length of the analytes, and distinction between ethoxylated and nonethoxylated phosphoric acid esters even in more complex mixts. The method enabled fast sepn. within 8 min after uncomplicated sample prepn.

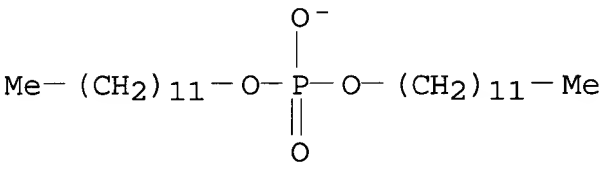
IT **3921-30-0D**, ethoxylated products
(alkyl-chain selective anal. of phosphoric acid esters by **nonaq**. capillary electrophoresis)
RN 3921-30-0 HCA
CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)

$H_2O_3PO-(CH_2)_9-Me$

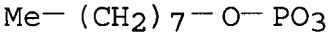
IT **45261-23-2 45300-74-1 60699-45-8 137910-89-5**
(alkyl-chain selective anal. of phosphoric acid esters by **nonaq**. capillary electrophoresis)
RN 45261-23-2 HCA
CN Phosphoric acid, dioctyl ester, ion(1-) (9CI) (CA INDEX NAME)



RN 45300-74-1 HCA
CN Phosphoric acid, didodecyl ester, ion(1-) (9CI) (CA INDEX NAME)



RN 60699-45-8 HCA
CN Phosphoric acid, monooctyl ester, ion(2-) (9CI) (CA INDEX NAME)



RN 137910-89-5 HCA
CN Phosphoric acid, monododecyl ester, ion(2-) (9CI) (CA INDEX NAME)

CC 80-5 (Organic Analytical Chemistry)
ST phosphoric acid ester **nonaq** capillary electrophoresis alkyl chain selective
IT Capillary electrophoresis
(alkyl-chain selective anal. of phosphoric acid esters by **nonaq**. capillary electrophoresis)
IT **3921-30-0D**, ethoxylated products
(alkyl-chain selective anal. of phosphoric acid esters by **nonaq**. capillary electrophoresis)
IT 7664-38-2D, Phosphoric acid, esters **45261-23-2** **45300-74-1** 52615-81-3 **60699-45-8** 84841-00-9 **137910-89-5** 458526-57-3 458526-59-5 458526-66-4
(alkyl-chain selective anal. of phosphoric acid esters by **nonaq**. capillary electrophoresis)
IT 121-44-8, Triethylamine, analysis 28728-55-4, Polybrene 55922-85-5
(alkyl-chain selective anal. of phosphoric acid esters by **nonaq**. capillary electrophoresis)
IT 123-39-7, N-Methylformamide
(**electrolyte** contg.; alkyl-chain selective anal. of

phosphoric acid esters by **nonaq**. capillary electrophoresis)

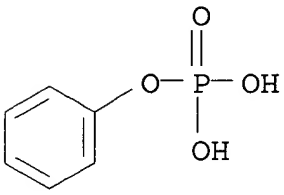
L39 ANSWER 2 OF 6 HCA COPYRIGHT 2002 ACS
136:20494 **Nonaqueous** gel **electrolytes** doped with phosphoric acid esters. Zukowska, G.; Wieczorek, W.; Kedzierski, M.; Florjanczyk, Z. (Faculty of Chemistry, Warsaw University of Technology, Warsaw, 00-664, Pol.). Solid State Ionics, 144(1,2), 163-173 (English) 2001. CODEN: SSIOD3. ISSN: 0167-2738. Publisher: Elsevier Science B.V..

date not good

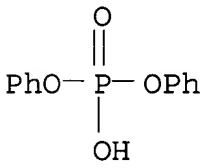
AB Highly conducting anhyd. gels doped with phosphoric acid esters were obtained by entrapping ester solns. in polar aprotic solvents into poly(vinylidene fluoride) or poly(Me methacrylate) matrixes. The phys.-chem. properties of the gels were studied as a function of type and concn. of proton donor and solvent. Use of 5-40% propylene carbonate / N,N-dimethylformamide solvent mixt. led to transparent gels. The cond. of the gels was 5 .times. 10-4 S cm-1 (PVdF-based systems) and 1 .times. 10-3 S cm-1 (PMMA-based gels). The mechanism of proton conduction was studied from impedance spectroscopy and PFG NMR data.

IT **701-64-4**, Monophenyl phosphate **838-85-7**, Diphenyl phosphate
(proton cond. of **nonaq**. gel **electrolytes** as function of phosphoric acid ester content and solvent type)

RN 701-64-4 HCA
CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



RN 838-85-7 HCA
CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 76

ST phosphoric acid ester polyvinylidene fluoride gel **electrolyte**; polymethyl methacrylate phosphoric acid ester **nonaq** gel; cond proton gel polymer phosphoric acid ester

IT Glass transition temperature
Polymer **electrolytes**

Protonation
Xerogels
(proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

IT Fluoropolymers, properties
(proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

IT Ionic conductivity
(proton; proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

IT 68-12-2, N,N-Dimethylformamide, properties 108-32-7, Propylene carbonate
(gel solvent mixt.; proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

IT **701-64-4**, Monophenyl phosphate **838-85-7**, Diphenyl phosphate 7664-38-2, Orthophosphoric acid, properties 9011-14-7, Poly(methyl methacrylate) 13421-39-1, p-tert-Butylphenyl phosphate 21150-89-0, Bis(4-tert-butylphenyl) phosphate 24937-79-9, Poly(vinylidene fluoride) 170944-38-4, 5,11,17,23-Tetra-p-tert-butyl-25-dihydrogen phosphate-.mu.-26,27,28-phosphate calix[4]arene 192517-26-3, 5,11,17,23-Tetra-p-tert-butyl-25-hydroxy-28-dihydrogen phosphate-.mu.-26,27-hydrogen phosphate calix[4]arene
(proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

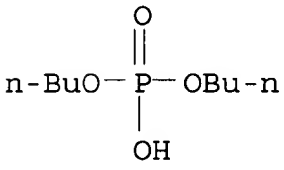
L39 ANSWER 3 OF 6 HCA COPYRIGHT 2002 ACS
134:44552 Secondary **nonaqueous electrolyte** **batteries** and their manufacture. Takezawa, Hideharu; Bito, Yasuhiko; Matsuda, Hiromu; Toyoguchi, Yoshinori (Matsushita Electric Industrial Co., Ltd., Japan). PCT Int. Appl. WO 2000076016 A1 20001214, 39 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP3581 20000601. PRIORITY: JP 1999-158615 19990604.

AB The **batteries** use cathodes, anodes, and/or Li salt **electrolyte** solns. contg. tri C7-12-alkyl phosphate, di C1-12-alkyl or di-aryl phosphate, and/or mono C1-12 alkyl phosphate or mono-aryl phosphate. The **batteries** are prepd. by using an electrode active mass, active mass paste, and/or electrodes contg. the phosphate ester.

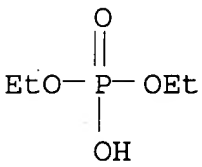
IT **107-66-4**, Dibutyl phosphate **598-02-7**, Diethyl phosphate **701-64-4**, Monophenyl phosphate **812-00-0**, Monomethyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate **1623-06-9**, Monopropyl phosphate **1623-14-9**, Monoethyl phosphate **1623-15-0**, Monobutyl phosphate **1804-93-9**, Dipropyl phosphate **2382-76-5**, Monopentyl phosphate **2627-35-2**, Monododecyl phosphate **3115-39-7**, Dioctyl phosphate **3138-42-9**, Dipentyl phosphate **3138-43-0**, Dinonyl phosphate **3900-03-6**, Monoheptyl phosphate

3900-04-7, Monohexyl phosphate **3900-12-7**, Diheptyl phosphate **3900-13-8**, Dihexyl phosphate **3921-30-0**, Monodecyl phosphate **3991-73-9**, Monooctyl phosphate **7057-92-3**, Didodecyl phosphate **7598-64-3**, Diundecyl phosphate **7795-87-1**, Didecyl phosphate **19541-53-8 36047-43-5**, Monononyl phosphate **36047-45-7**, Monoundecyl phosphate **54653-10-0 54653-24-6 86052-84-8 130675-91-1 130675-92-2 160087-64-9 312636-95-6 312636-96-7 312636-97-8 312636-98-9 312636-99-0**
(phosphate ester additives in electrodes and **electrolyte** solns. for secondary lithium **batteries**)

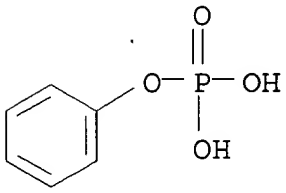
RN 107-66-4 HCA
CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)



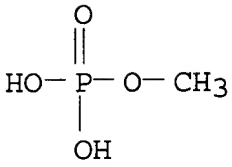
RN 598-02-7 HCA
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



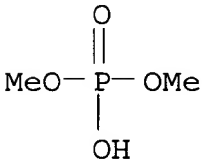
RN 701-64-4 HCA
CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



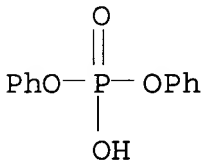
RN 812-00-0 HCA
CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



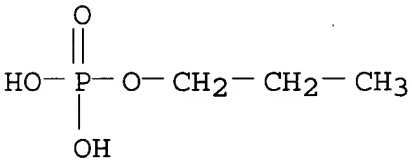
RN 813-78-5 HCA
CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



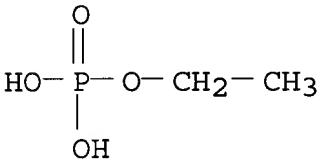
RN 838-85-7 HCA
CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



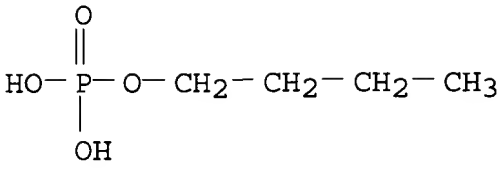
RN 1623-06-9 HCA
CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



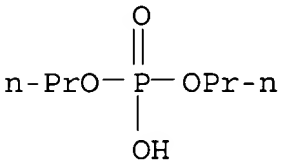
RN 1623-14-9 HCA
CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)



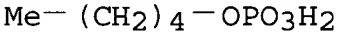
RN 1623-15-0 HCA
CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



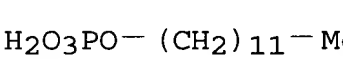
RN 1804-93-9 HCA
CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



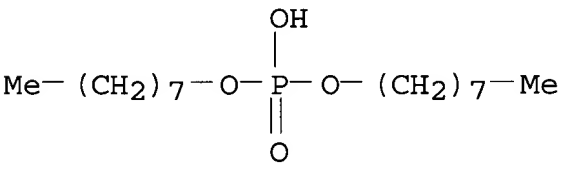
RN 2382-76-5 HCA
CN Phosphoric acid, monopentyl ester (8CI, 9CI) (CA INDEX NAME)



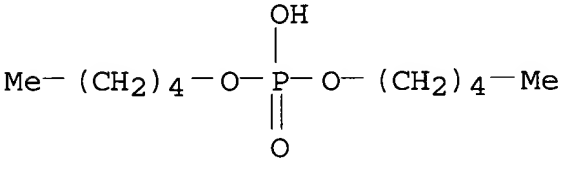
RN 2627-35-2 HCA
CN Phosphoric acid, monododecyl ester (8CI, 9CI) (CA INDEX NAME)



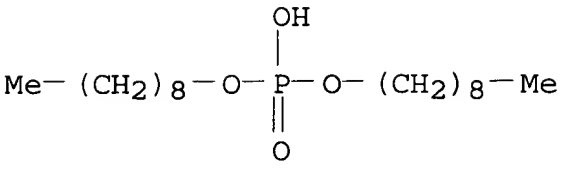
RN 3115-39-7 HCA
CN Phosphoric acid, dioctyl ester (8CI, 9CI) (CA INDEX NAME)



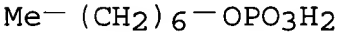
RN 3138-42-9 HCA
CN Phosphoric acid, dipentyl ester (8CI, 9CI) (CA INDEX NAME)



RN 3138-43-0 HCA
CN Phosphoric acid, dinonyl ester (8CI, 9CI) (CA INDEX NAME)

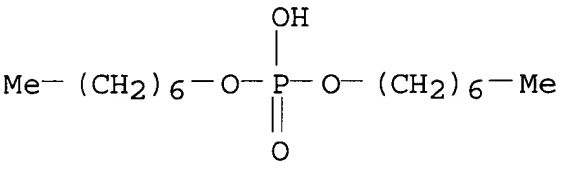


RN 3900-03-6 HCA
CN Phosphoric acid, monoheptyl ester (8CI, 9CI) (CA INDEX NAME)

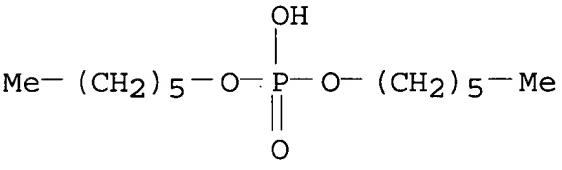


RN 3900-04-7 HCA
CN Phosphoric acid, monohexyl ester (8CI, 9CI) (CA INDEX NAME)

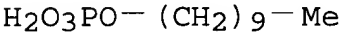
RN 3900-12-7 HCA
CN Phosphoric acid, diheptyl ester (8CI, 9CI) (CA INDEX NAME)



RN 3900-13-8 HCA
CN Phosphoric acid, dihexyl ester (8CI, 9CI) (CA INDEX NAME)

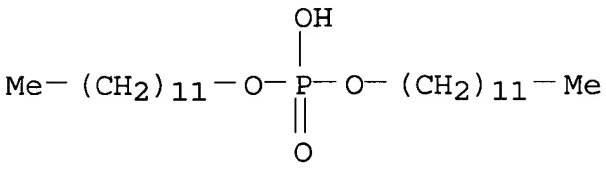


RN 3921-30-0 HCA
CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)

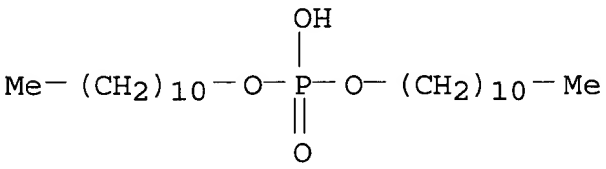


RN 3991-73-9 HCA
CN Phosphoric acid, monooctyl ester (9CI) (CA INDEX NAME)

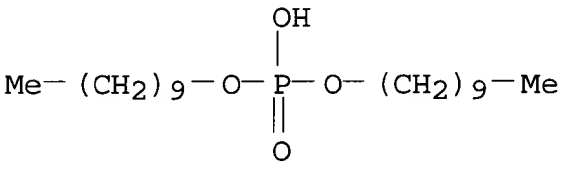
RN 7057-92-3 HCA
CN Phosphoric acid, didodecyl ester (8CI, 9CI) (CA INDEX NAME)



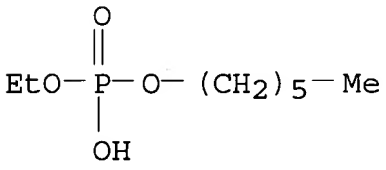
RN 7598-64-3 HCA
CN 1-Undecanol, hydrogen phosphate (9CI) (CA INDEX NAME)



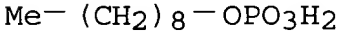
RN 7795-87-1 HCA
CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



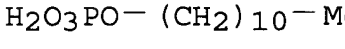
RN 19541-53-8 HCA
CN Phosphoric acid, monoethyl monohexyl ester (9CI) (CA INDEX NAME)



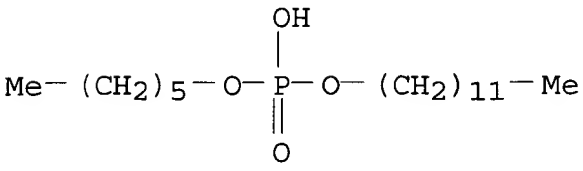
RN 36047-43-5 HCA
CN Phosphoric acid, monononyl ester (9CI) (CA INDEX NAME)



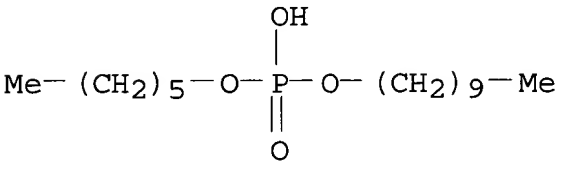
RN 36047-45-7 HCA
CN 1-Undecanol, dihydrogen phosphate (9CI) (CA INDEX NAME)



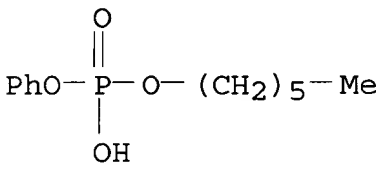
RN 54653-10-0 HCA
CN Phosphoric acid, monododecyl monohexyl ester (9CI) (CA INDEX NAME)



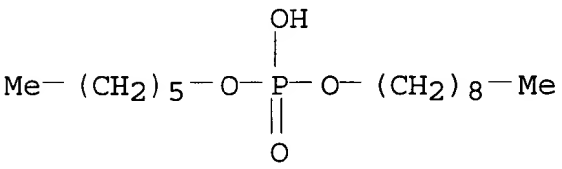
RN 54653-24-6 HCA
CN Phosphoric acid, monodecyl monohexyl ester (9CI) (CA INDEX NAME)



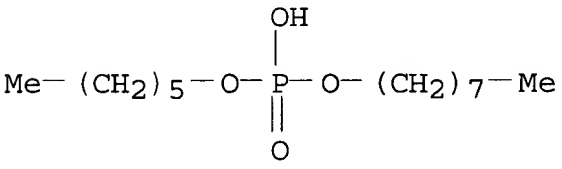
RN 86052-84-8 HCA
CN Phosphoric acid, monohexyl monophenyl ester (9CI) (CA INDEX NAME)



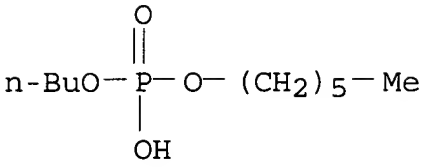
RN 130675-91-1 HCA
CN Phosphoric acid, monohexyl monononyl ester (9CI) (CA INDEX NAME)



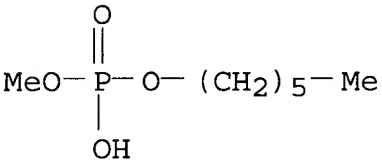
RN 130675-92-2 HCA
CN Phosphoric acid, monohexyl monooctyl ester (9CI) (CA INDEX NAME)



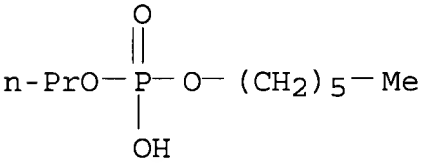
RN 160087-64-9 HCA
CN Phosphoric acid, monobutyl monohexyl ester (9CI) (CA INDEX NAME)



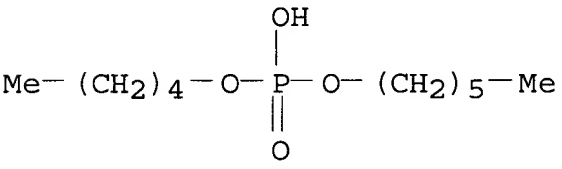
RN 312636-95-6 HCA
CN Phosphoric acid, monohexyl monomethyl ester (9CI) (CA INDEX NAME)



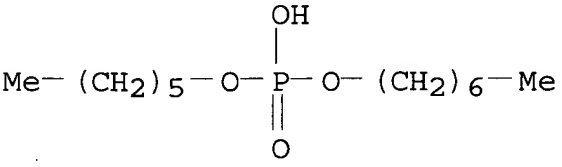
RN 312636-96-7 HCA
CN Phosphoric acid, monohexyl monopropyl ester (9CI) (CA INDEX NAME)



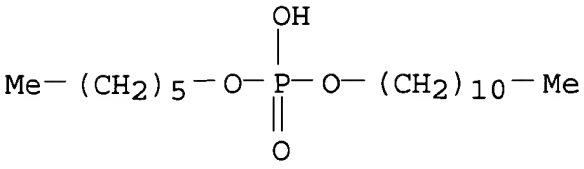
RN 312636-97-8 HCA
CN Phosphoric acid, monohexyl monopentyl ester (9CI) (CA INDEX NAME)



RN 312636-98-9 HCA
CN Phosphoric acid, monoheptyl monohexyl ester (9CI) (CA INDEX NAME)



RN 312636-99-0 HCA
CN Phosphoric acid, monohexyl monoundecyl ester (9CI) (CA INDEX NAME)



IC ICM H01M010-40
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium **battery** phosphate ester additive
IT Secondary **batteries**
(lithium; electrodes and **electrolyte** solns. contg. phosphate ester additives for secondary lithium **batteries**)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 7440-44-0, Carbon, uses 7791-03-9, Lithium perchlorate 12190-79-3, Cobalt lithium oxide (CoLiO2)
(electrodes and **electrolyte** solns. contg. phosphate ester additives for secondary lithium **batteries**)
IT **107-66-4**, Dibutyl phosphate **598-02-7**, Diethyl phosphate 682-49-5, Tridodecyl phosphate **701-64-4**, Monophenyl phosphate **812-00-0**, Monomethyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate **1623-06-9**, Monopropyl phosphate **1623-14-9**, Monoethyl phosphate **1623-15-0**, Monobutyl phosphate **1804-93-9**, Dipropyl phosphate 1806-54-8, Trioctyl phosphate **2382-76-5**, Monopentyl phosphate **2627-35-2**, Monododecyl phosphate **3115-39-7**, Dioctyl phosphate **3138-42-9**, Dipentyl phosphate **3138-43-0**, Dinonyl phosphate **3900-03-6**, Monoheptyl phosphate **3900-04-7**, Monohexyl phosphate **3900-12-7**, Diheptyl phosphate **3900-13-8**, Dihexyl phosphate **3921-30-0**, Monodecyl phosphate **3991-73-9**, Monooctyl phosphate 4200-55-9, Tridecyl phosphate 4621-50-5, Triheptyl phosphate **7057-92-3**, Didodecyl phosphate **7598-64-3**, Diundecyl phosphate **7795-87-1**, Didecyl phosphate 13018-37-6, Trinonyl phosphate **19541-53-8** **36047-43-5**, Monononyl phosphate **36047-45-7**, Monoundecyl phosphate **54653-10-0** **54653-24-6** **86052-84-8** **130675-91-1** **130675-92-2** **160087-64-9** 312636-94-5 **312636-95-6** **312636-96-7** **312636-97-8** **312636-98-9** **312636-99-0**
(phosphate ester additives in electrodes and **electrolyte** solns. for secondary lithium **batteries**)

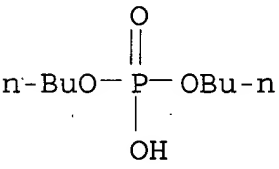
L39 ANSWER 4 OF 6 HCA COPYRIGHT 2002 ACS
133:323991 Phosphate additives for **nonaqueous** **electrolyte** in rechargeable lithium ion **batteries**.
Gan, Hong; Takeuchi, Esther S. (Wilson Greatbatch Ltd., USA). Eur.

Pat. Appl. EP 1050916 A1 20001108, 14 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-303719 20000503. PRIORITY: US 1999-303877 19990503.

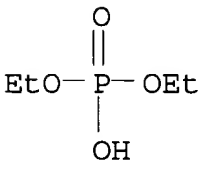
AB In a lithium ion **electrochem. cell** having high charge/discharge capacity, long cycle life and exhibiting a reduced first cycle irreversible capacity, at least one phosphate additive is added to an **electrolyte** comprising an alkali metal salt dissolved in a solvent mixt. that includes ethylene carbonate, di-Me carbonate, ethylmethyl carbonate and di-Et carbonate. The phosphate additive has the formula: (R1O)P(:O)(OR2)(OR3) and wherein if R1, R2, and R3 are the same or different and may represent a H atom or a satd. or unsatd. org. group contg. 1-13 C atoms and wherein R1, R2, and R3 are not H, at least one of them is CR4R5R6 wherein R4 is an arom. substituent or an unsatd. org. or inorg. group and R5 and R6 are the same or different and may represent a H atom or a satd. or unsatd. org. or inorg. group; with the proviso that the phosphate additive is not dibenzyl phosphate. The preferred additive is an alkyl phosphate compd.

IT **107-66-4**, Dibutylphosphate **598-02-7**, Diethyl phosphate **701-64-4**, Monophenyl phosphate **812-00-0**, Monomethyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate **1623-06-9**, Monopropyl phosphate **1623-14-9**, Monoethyl phosphate **1623-15-0**, Monobutyl phosphate **1804-93-9**, Dipropyl phosphate
(phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)

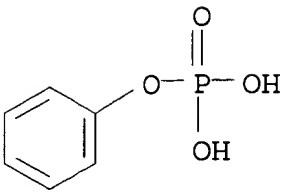
RN 107-66-4 HCA
CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)



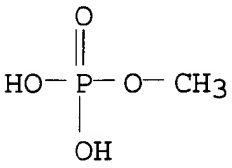
RN 598-02-7 HCA
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



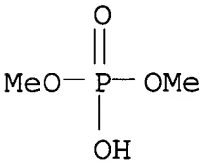
RN 701-64-4 HCA
CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



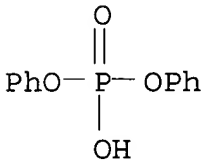
RN 812-00-0 HCA
CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



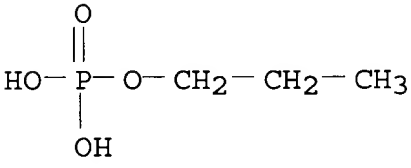
RN 813-78-5 HCA
CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



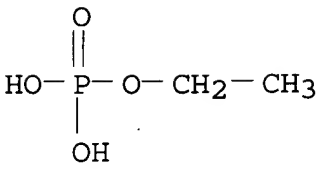
RN 838-85-7 HCA
CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



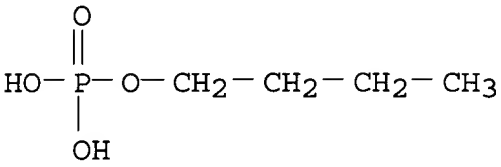
RN 1623-06-9 HCA
CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



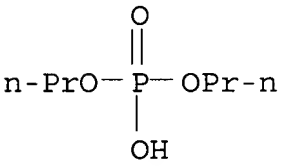
RN 1623-14-9 HCA
CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1623-15-0 HCA
CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1804-93-9 HCA
CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M010-40
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium **battery electrolyte** phosphate additive
IT Secondary **batteries**
(lithium; phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)
IT **Battery electrolytes**
(phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)
IT Alkali metals, uses
Carbon black, uses
Carbon fibers, uses
Coke
(phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)
IT Fluoropolymers, uses
(phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)
IT 7440-44-0, Carbon, uses
(glassy; phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate

108-32-7, Propylene carbonate 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 872-36-6, Vinylene carbonate 2923-17-3 2923-20-8 4437-85-8, Butylene carbonate 7439-93-2, Lithium, uses 7782-42-5, Graphite, uses 7790-69-4, Lithium nitrate 7791-03-9, Lithium perchlorate 11113-67-0, Iron Lithium oxide 11126-15-1, Lithium vanadium oxide 12031-63-9, Lithium niobium oxide (LiNbO3) 12190-79-3, Cobalt lithium oxide colio2 12680-08-9, Lithium titanium sulfide 13453-75-3, Lithium fluorosulfate 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15955-98-3, Lithium tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate 37296-91-6, Lithium molybdenum oxide 37367-96-7, Lithium molybdenum sulfide 39300-70-4, Lithium nickel oxide 39302-37-9, Lithium titanium oxide 39457-42-6, Lithium manganese oxide 51177-06-1, Chromium Lithium oxide 52627-24-4, Cobalt Lithium oxide 56321-19-8, Lithium niobium sulfide 56525-42-9, Methyl propyl carbonate 61673-65-2, Lithium niobium selenide 61673-69-6, Lithium titanium selenide 61673-70-9, Lithium titanium telluride 61673-71-0, Lithium vanadium selenide 74245-06-0, Lithium vanadium sulfide 80341-49-7, Iron Lithium sulfide 90076-65-6 96352-80-6, Lithium molybdenum selenide 96352-81-7, Lithium molybdenum telluride 103288-79-5, Cobalt Lithium sulfide 104708-77-2, Copper Lithium oxide 115028-88-1 132404-42-3 148884-75-7, Cobalt Lithium selenide 264142-74-7, Lithium vanadium telluride 264142-75-8, Chromium Lithium sulfide 264142-76-9, Chromium Lithium selenide 264142-77-0, Chromium Lithium telluride 264142-78-1, Copper Lithium sulfide 264142-79-2, Copper Lithium selenide 264142-81-6, Lithium niobium telluride 264142-82-7, Iron Lithium selenide 264142-83-8, Iron Lithium telluride 264142-84-9, Lithium nickel sulfide 264142-85-0, Lithium nickel selenide 264142-86-1, Lithium nickel telluride 264142-87-2, Cobalt Lithium telluride 264142-88-3, Lithium manganese sulfide 264142-89-4, Lithium manganese selenide 264142-90-7, Lithium manganese telluride
(phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)

IT **107-66-4**, Dibutylphosphate **598-02-7**, Diethyl phosphate **701-64-4**, Monophenyl phosphate **812-00-0**, Monomethyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate 884-90-2, Phosphoric acid, benzyl Diethyl ester **1623-06-9**, Monopropyl phosphate 1623-07-0, Benzyl phosphate **1623-14-9**, Monoethyl phosphate **1623-15-0**, Monobutyl phosphate 1707-92-2, Tribenzyl phosphate **1804-93-9**, Dipropyl phosphate 3066-75-9 7748-09-6, Diallyl phosphate 10497-05-9, Tris(trimethylsilyl)phosphate 28519-15-5, Phosphoric acid, benzyl dibutyl ester 32636-65-0, Diethyl Diphenylmethyl phosphate 67293-73-6, Phosphoric acid, dimethyl phenylmethyl ester

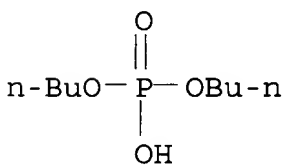
269402-58-6, Phosphoric acid, phenylmethyl Dipropyl ester
(phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)

L39 ANSWER 5 OF 6 HCA COPYRIGHT 2002 ACS
132:350275 Alkali metal **electrochemical cell** having an improved cathode activated with a **nonaqueous electrolyte** having a passivation inhibitor additive. Takeuchi, Esther S.; Leising, Randolph A.; Gan, Hong (Wilson Greatbatch Ltd., USA). Eur. Pat. Appl. EP 1005098 A2 20000531, 18 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-308910 19991109. PRIORITY: US 1998-200304 19981125.

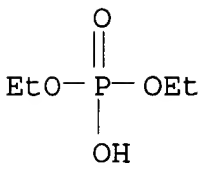
AB The present invention is directed to an unexpected benefit in a lithium cell which may be derived from using a combination of silver vanadium oxide prepd. in a temp. range of 450.degree. to 500.degree. activated with a **nonaq. electrolyte** having a passivation inhibitor additive selected from a nitrite, a nitrate, a carbonate, a dicarbonate, a phosphonate, a phosphate, a sulfate and hydrogen fluoride, and mixts. thereof. The benefits may include addnl. **battery** life resulting from a redn. in voltage delay and RDC build-up. A preferred **electrolyte** is 1M LiAsF6 in a 50:50 mixt., by vol.; of PC and DME having dibenzyl carbonate added therein.

IT **107-66-4 598-02-7**, Diethyl phosphate **701-64-4**, Mono-phenyl phosphate **812-00-0**, Mono-methyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate **1623-06-9**, Mono-propyl phosphate **1623-14-9**, Mono-ethyl phosphate **1623-15-0**, Mono-butyl phosphate **1804-93-9**, Dipropyl phosphate
(alkali metal **battery** having improved cathode activated with **nonaq. electrolyte** having passivation inhibitor additive)

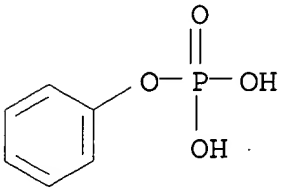
RN 107-66-4 HCA
CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)



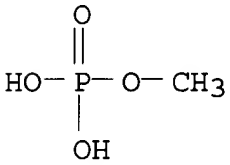
RN 598-02-7 HCA
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



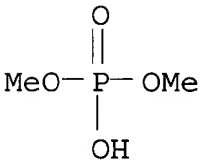
RN 701-64-4 HCA
CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



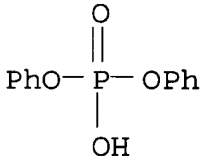
RN 812-00-0 HCA
CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



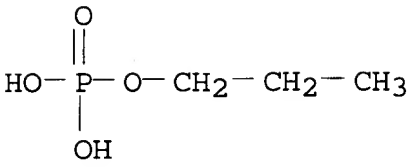
RN 813-78-5 HCA
CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



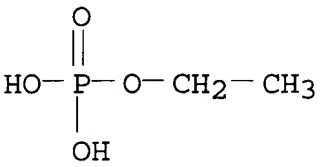
RN 838-85-7 HCA
CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



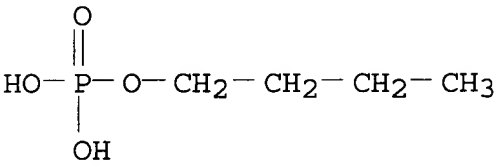
RN 1623-06-9 HCA
CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



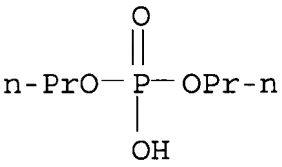
RN 1623-14-9 HCA
CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1623-15-0 HCA
CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1804-93-9 HCA
CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M006-16
ICS H01M004-48
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** cathode passivation inhibitor additive
IT Air
Battery cathodes
(alkali metal **battery** having improved cathode activated with **nonaq. electrolyte** having passivation inhibitor additive)
IT Transition metal chalcogenides
(alkali metal **battery** having improved cathode activated with **nonaq. lectrolyte** having passivation inhibitor additive)
IT 1313-13-9, Manganese dioxide, uses 1313-99-1, Nickel oxide nio,

uses 1344-70-3, Copper oxide 7439-93-2, LIthium, uses 11104-61-3, Cobalt oxide 11105-02-5, Silver vanadium oxide 11115-78-9, Copper sulfide 11126-12-8, Iron sulfide 12039-13-3, Titanium disulfide 12068-85-8, Iron disulfide 12789-09-2, Copper vanadium oxide 181183-66-4, Copper silver vanadium oxide
(alkali metal **battery** having improved cathode activated with **nonaq. electrolyte** having passivation inhibitor additive)

IT 67-68-5, Dmso, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 79-20-9, Methyl acetate 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8 108-20-3, Diisopropyl ether 108-29-2, .gamma.-Valerolactone 108-32-7, Propylene carbonate 109-99-9, uses 110-71-4, 1,2-Dimethoxyethane 111-96-6 112-49-2, Triglyme 127-19-5, Dimethyl acetamide 143-24-8, Tetraglyme 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 2923-17-3 2923-20-8 4437-85-8, Butylene carbonate 5137-45-1, 1-Ethoxy-2-methoxyethane 7790-69-4, Lithium nitrate 7791-03-9 13453-75-3, Lithium fluorosulfate 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, LIthium tetraphenylborate 15955-98-3, Lithium tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 30207-69-3, -Methylpyrrolidinone 33454-82-9, LIthium triflate 35363-40-7, Ethyl propyl carbonate 56525-42-9, Methyl propyl carbonate 90076-65-6 132404-42-3
(alkali metal **battery** having improved cathode activated with **nonaq. electrolyte** having passivation inhibitor additive)

IT 57-52-3, Bis(triethyltin)sulfate 64-67-5, Diethyl sulfate 77-78-1, Dimethyl sulfate **107-66-4** 109-95-5, Ethyl nitrite 540-80-7, tert-Butyl nitrite 541-42-4, Isopropyl nitrite 542-56-3, Isobutyl nitrite 543-29-3, Isobutyl nitrate 543-67-9, Propyl nitrite 544-16-1, Butyl nitrite **598-02-7**, Diethyl phosphate 598-05-0, Dipropyl sulfate 624-91-9, Methyl nitrite 625-22-9, Dibutyl sulfate 627-13-4, Propyl nitrate 683-08-9, Diethyl methyl phosphonate **701-64-4**, Mono-phenyl phosphate 756-79-6, Dimethyl methyl phosphonate 762-04-9, Diethyl phosphonate 773-47-7, Dimethyl benzylphosphonate **812-00-0**, Mono-methyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate 868-85-9, Dimethyl phosphonate 884-90-2, Phosphoric acid, diethyl phenylmethyl ester 926-05-6, tert-Butyl nitrate 928-45-0, Butyl nitrate 935-05-7, Benzyl nitrite 1469-70-1, Allyl ethyl carbonate 1610-33-9, Ethyl methyl phosphonate **1623-06-9**, Mono-propyl phosphate 1623-07-0, Benzyl phosphate 1623-08-1, Dibenzyl phosphate **1623-14-9**, Mono-ethyl phosphate **1623-15-0**, Mono-butyl phosphate 1707-92-2, Tribenzyl phosphate 1712-64-7, Isopropyl nitrate **1804-93-9**, Dipropyl phosphate 1809-19-4, Dibutyl phosphonate 1809-21-8, Dipropyl phosphonate 2104-20-3, Phenyl nitrate 2404-73-1, Dibutyl methyl phosphonate

2649-11-8, Didodecyl sulfate 3066-75-9, Phosphoric acid, diethyl 2-propenyl, ester 3459-92-5, Dibenzyl carbonate 4074-56-0, Diphenyl sulfate 4427-92-3, 4-Phenyl-1,3-dioxolan-2-one 4712-55-4, Diphenyl phosphonate 5944-45-6, Dicarbonic acid, methyl 2-propenyl ester 5944-47-8, Dicarbonic acid, ethyl phenylmethyl ester 6410-56-6, Dipropyl methyl phosphonate 7526-26-3, Diphenyl methyl phosphonate 7664-38-2, Phosphoric acid, uses 7748-09-6, Diallyl phosphate 7757-79-1, Potassium nitrate, uses 10124-37-5, Calcium nitrate 10377-60-3, Magnesium nitrate 10497-05-9, Tris(trimethylsilyl)phosphate 13598-36-2, Phosphorous acid, uses 15022-08-9, Diallyl carbonate 15285-42-4, Benzyl nitrate 17176-77-1, Dibenzyl phosphonate 18306-29-1, Bis(trimethylsilyl)sulfate 18495-74-4, Dibenzyl sulfate 19236-58-9, Dibenzyl methyl phosphonate 24424-99-5, Di-tert-butyl dicarbonate 27991-93-1, Sulfuric acid, Bis(4-nitrophenyl) ester, uses 28519-15-5, Phosphoric acid, dibutyl phenylmethyl ester 31139-36-3, Dibenzyl dicarbonate 32636-65-0, Phosphoric acid, diphenylmethyl diethyl ester 34207-39-1, Nitrous acid, phenyl ester 54963-39-2, Phosphonic acid, (diphenylmethyl)-, dimethyl ester 57772-64-2 59577-32-1 66065-85-8, Succinimidyl-2,2,2-trichloroethyl carbonate 66085-82-3, Dicarbonic acid, methylphenyl ester 66186-16-1, Didecyl sulfate 66735-55-5, Methyl Phenyl sulfate 72101-14-5, Phosphoric acid, Dimethyl methylphenyl ester 74124-79-1 104184-81-8, Sulfuric acid, 2-chloroethyl ethyl ester 115491-93-5, Diallyl dicarbonate 116977-36-7, Dicarbonic acid, ethyl 2-propenyl ester 246140-06-7, Dicarbonic acid, methyl phenylmethyl ester 246140-07-8, Dicarbonic acid, phenylmethyl propyl ester 246140-10-3, Dicarbonic acid, butyl phenylmethyl ester 246140-17-0, Dicarbonic acid, mono-2-propenyl ester 246140-18-1, Dicarbonic acid, 2-propenyl propyl ester 246140-20-5, Dicarbonic acid, mono-methyl ester 246140-22-7, Dicarbonic acid, mono-ethyl ester 246140-24-9, Dicarbonic acid, mono-propyl ester 246140-26-1, Dicarbonic acid, mono-butyl ester 246140-27-2, Dicarbonic acid, cyanomethyl methyl ester 246140-29-4, Dicarbonic acid, methyl nitromethyl ester 269402-58-6 269402-59-7 269402-60-0
(alkali metal **battery** having improved cathode activated with **nonaq. electrolyte** having passivation inhibitor additive)

IT 534-16-7, Silver carbonate 563-63-3, Silver acetate 1314-62-1, Vanadium pentoxide, reactions 7440-22-4, Silver, reactions 7761-88-8, Silver nitrate, reactions 7783-99-5, Silver nitrite 20667-12-3, Silver oxide ag2o
(alkali metal **battery** having improved cathode activated with **nonaq. electrolyte** having passivation inhibitor additive)

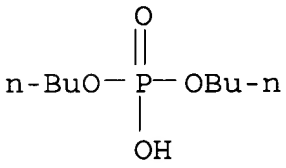
IT 7440-37-1, Argon, uses 7440-59-7, Helium, uses 7727-37-9, Nitrogen, uses 7782-44-7, Oxygen, uses
(alkali metal **battery** having improved cathode activated with **nonaq. electrolyte** having passivation inhibitor additive)

L39 ANSWER 6 OF 6 HCA COPYRIGHT 2002 ACS
130:340670 Phosphate additives for **nonaqueous electrolyte** in alkali metal **electrochemical cells**. Gan, Hong; Takeuchi, Esther S. (Wilson Greatbatch Ltd., USA). Eur. Pat. Appl. EP 918364 A1 19990526, 28 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-308674 19981023. PRIORITY: US 1997-974305 19971119.

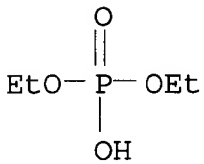
AB An alkali metal, solid cathode, **nonaq. electrochem. cell** capable of delivering high current pulses, rapidly recovering its open circuit voltage and having high current capacity, is disclosed. The stated benefits are realized by the addn. of at least one phosphate additive to an **electrolyte** comprising an alkali metal salt dissolved in a mixt. of a low viscosity solvent and a high permittivity solvent. A preferred solvent mixt. includes propylene carbonate, dimethoxyethane and an alkyl phosphate additive.

IT **107-66-4**, Dibutyl phosphate **598-02-7**, Diethyl phosphate **701-64-4**, Monophenyl phosphate **812-00-0**, Monomethyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate **1623-06-9**, Monopropyl phosphate **1623-14-9**, Monoethyl phosphate **1623-15-0**, Monobutyl phosphate **1804-93-9**, Dipropyl phosphate
(phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)

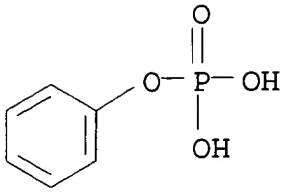
RN 107-66-4 HCA
CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)



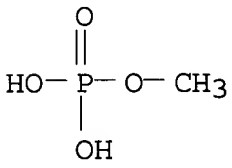
RN 598-02-7 HCA
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



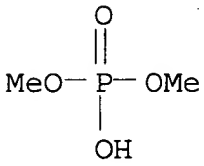
RN 701-64-4 HCA
CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



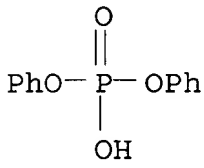
RN 812-00-0 HCA
CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



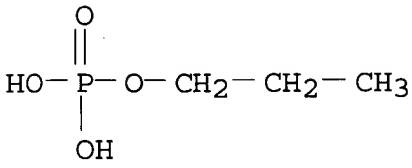
RN 813-78-5 HCA
CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



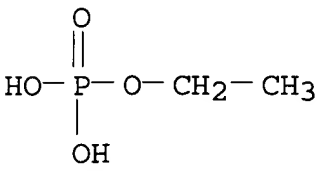
RN 838-85-7 HCA
CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



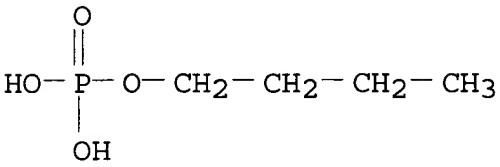
RN 1623-06-9 HCA
CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



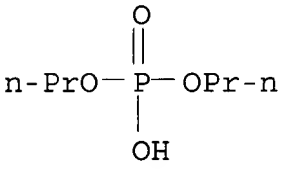
RN 1623-14-9 HCA
CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1623-15-0 HCA
CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1804-93-9 HCA
CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M010-44
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery electrolyte** phosphate additive
IT Fluoropolymers, uses
(binder; phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)
IT Primary **batteries**
(lithium; phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)
IT **Battery electrolytes**
(phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)
IT Carbon black, uses
(phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)
IT 1313-13-9, Manganese dioxide, uses 7439-93-2, Lithium, uses 11099-02-8, Nickel oxide 11104-61-3, Cobalt oxide 11105-02-5, Silver vanadium oxide 11115-78-9, Copper sulfide 11126-12-8, Iron sulfide 12039-13-3, Titanium disulfide 12068-85-8, Iron disulfide 12789-09-2, Copper vanadium oxide 12798-95-7 181183-66-4, Copper Silver vanadium oxide

(phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)

IT 67-68-5, Dmso, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 79-20-9, Methyl acetate 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 111-96-6, Diglyme 112-49-2, Triglyme 127-19-5, Dimethyl acetamide 143-24-8, Tetraglyme 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 872-50-4, n-Methylpyrrolidone, uses 2923-20-8, Ethanesulfonic acid, pentafluoro-, lithium salt 4437-85-8, Butylene carbonate 5137-45-1, 1-Ethoxy, 2-methoxyethane 7791-03-9, Lithium perchlorate 13453-75-3, Lithium fluorosulfate 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15955-98-3, Lithium tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium trifluoromethanesulfonate 35363-40-7, Ethyl propyl carbonate 56525-42-9, Methyl propyl carbonate 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide 114691-03-1 115028-88-1 132404-42-3

(phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)

IT **107-66-4**, Dibutyl phosphate **598-02-7**, Diethyl phosphate **701-64-4**, Monophenyl phosphate **812-00-0**, Monomethyl phosphate **813-78-5**, Dimethyl phosphate **838-85-7**, Diphenyl phosphate 884-90-2, Phosphoric acid, diethyl phenylmethyl ester **1623-06-9**, Monopropyl phosphate 1623-08-1, Dibenzyl phosphate **1623-14-9**, Monoethyl phosphate **1623-15-0**, Monobutyl phosphate 1707-92-2, Tribenzyl phosphate **1804-93-9**, Dipropyl phosphate 3066-75-9, Phosphoric acid, diethyl 2-propenyl ester 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7748-09-6, Diallyl phosphate 7782-42-5, Graphite, uses 10497-05-9, Tris(trimethylsilyl)phosphate 12597-68-1, Stainless steel, uses 28519-15-5, Phosphoric acid, benzyl Dibutyl ester 32636-65-0 66325-71-1 67293-73-6, Phosphoric acid, dimethyl phenylmethyl ester

(phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)

09/762,220

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	ErrorDefinition	Errors
1	BRS	L22	356	H01M$8 and ((electrode anode cathode) with phosphate)	EPO; JPO; DERWENT	2002/12/14 21:14			0
2	BRS	L21	223	429/$.ccls. and ((electrode anode cathode) with phosphate)	USPAT; US-PGPUB	2002/12/14 21:14			0